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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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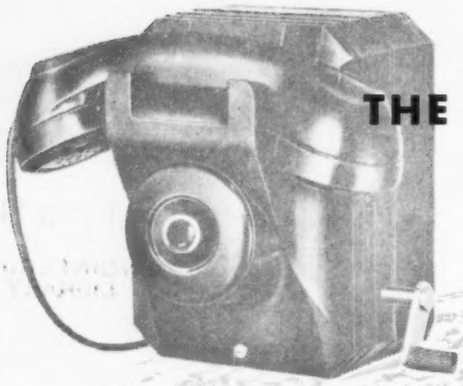


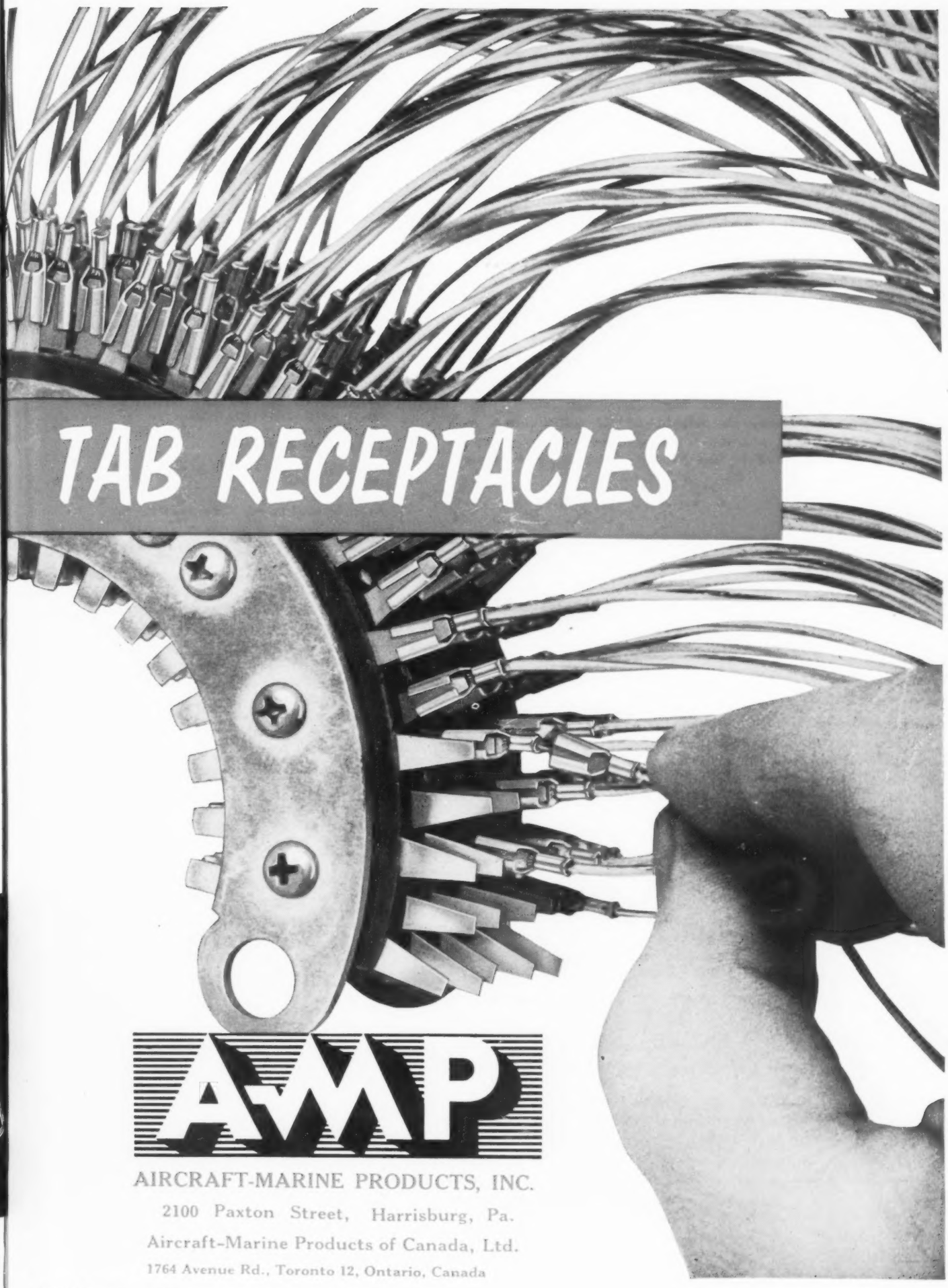
THE "FARMER'S FRIEND" HAS BECOME A CITY SLICKER!

TELEPHONY'S

Removing handset partially operates the hookswitch, connecting the *receiver only* to the line. No mutilating of calls or dial pulses.

If the line is obviously not being used, the subscriber depresses the small "two-step" button. This connects the transmitter into the line.

Replacing the handset restores the hookswitch to its not-in-use position and resets the "two-step" mechanism, for the next use.



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2100 Paxton Street, Harrisburg, Pa.

Aircraft-Marine Products of Canada, Ltd.

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FLASHES AND PLUGS

NIGHT MARES. A young New York matron, whose imaginative five-year-old son keeps her posted on the tigers he has seen on the front porch and the Indians and cowboys he has run into in the yard, was awakened one night by the lad.

He stood beside her bed and announced that a herd of wild horses was coming down the road.

Scarcely had she told him, gently, to go back to bed when she heard what *did* sound like the approaching clatter of horses' hooves.

She rushed to the window of her son's room, which faces the road in front of the house.

In amazement, she watched a shadowy group of horses, riderless and saddleless, thunder past.

She woke her husband, a sound sleeper, and he told her, gently, to go back to bed. This she did, but didn't sleep.

Fearing for her sanity, she telephoned the police station next morning, and learned, with relief, that she had indeed seen horses on the loose. A herd of 40 had escaped during the night from a nearby dude ranch.

• • •

LONG DISTANCE. A stock broker on Chicago's La Salle Street, recently made his first call to South America.

He was excited with the realization that his words were being carried several thousand miles, and his voice grew louder and louder.

Finally one of his associates suggested, "Say, Jim, why don't you open the window and hang up?"

• • •

VICIOUS CIRCLE. A man called up his doctor's office to ask when the doctor would be back from his vacation.

A feminine voice, not that of the doctor's secretary, answered and said he would be back in two weeks.

"Who is this?" the man asked.

"This is the telephone-answering service," the voice replied, and added, "Doctor J——is taking all cases. Shall I give you his number?"

She did. The man called it, and a now familiar voice answered.

"Who is this?" the man said.

The reply came: "This is the telephone-answering service." So he . . . .

• • •

MOPPETS METICULOUS. Attendance had dropped off sharply among the eight-year-olds at the YMCA's summer recreation club at Sharon Hill, O.

The club director decided to telephone the mothers and find out why. He found out.

He learned that the kids objected to being put in an age group called "tots." They also disliked playing in an area called the "Tot Lot."

The director worked fast. The children's play area is now called "Indian Village" and its denizens are "beavers."

Attendance is back to normal.

CIRCULATION

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Appraisal of Significant Trends as to

Rate Base—Depreciation—Rate of Return

By FRANCIS X. WELCH, TELEPHONY's Washington Editor
(Address before Section of Public Utility Law, American Bar Association)

I AM HONORED to have this opportunity to discuss, before this group of eminent legal specialists, a subject which is so fundamental to the law of public utility regulation—*the rate base and its related factors of return and depreciation.* At the same time, it is something of a challenge to go over such a well-harrowed field—one which has been covered so often through the years by top experts—and try to bring forth at this late date something new or valuable by way of conclusion or future outlook.

Yet, I believe there is something more to be gained, at this particular time—than the sterile polishing of historical bones—in going back for another examination of those well-known foundation blocks on which the structure of our modern law of utility regulation has been erected, case by case, and statute by statute. I say at this particular time, because we are now meeting in this historic city of Boston to celebrate the 75th anniversary of the founding of our great American Bar Association. And it so happens, by strange coincidence, that just about three-quarters of a century ago—give or take a single year—three events happened of utmost importance in the field of public utility regulation.

First, the telephone industry was born; second, the electric light was born; and third, constitutional regulation of public utility rates in the United State was born. The first successful public demonstrations of the telephone by its inventor, Dr. Alexander Graham Bell, were made in 1877. Next year—1954—the electric utility industry will celebrate the diamond jubilee of Thomas Edison's electric light. And, as you know, it was in 1877 that the U. S. Supreme Court placed the seal of constitutional approval on a statute fixing public utility rates in that basic landmark decision, Munn *v.* Illinois.[1] Of course, the concept of utility regulation is much older. Chief Justice Waite in that very same decision traced it back to Lord Chief Justice Hale over three centuries ago. But for purposes of legal American history in utility rate making, the *Munn Case* was undoubtedly our starting point.

Rate Base Not Issue

Unfortunately, the question of a rate base was not discussed in the *Munn Case* for the simple reason that it was not before the court. The only issue that was before the court was the bare constitutional question of whether the state of Illinois could, by statute, validly single out a certain class of business (in that case it was grain elevators) and fix or limit the price to be charged to the public for its services or products.

I say this was unfortunate because if the court had gone into a consideration of the basis for rate fixing in the Munn Case, it might have saved some of our latter-day justices, on the same highest court, a lot of unnecessary and fine-haired distinctions between rate fixing as a police power of the state and rate fixing on the basis of the so-called eminent domain theory. That is a distinction which three justices (and mark you well I say *three* justices) labored so much in the concurring opinion of Justices Black, Douglas, and Murphy in the *Natural Gas Pipeline Case*, decided in 1942.[2]

You may recall that the three justices were so determined to "lay the ghost of *Smyth v. Ames*"[3] (I quote that phrase from the opinion) with its rule of fair value, decided in 1898, that they disagreed with the majority opinion by Chief Justice Stone, which restated the power of the highest court to invalidate confiscatory rate orders. The three justices insisted that legislative price-fixing, as upheld in the *Munn Case*, is not prohibited by the due process clause. From this it was inferred that such rates are not subject to judicial review or correction from the standpoint of alleged confiscation.

Frankfurter Writes 2 Opinions

Now that was a pretty strong doctrine and you may recall that it moved Justice Frankfurter to write a second concurring opinion in the *Pipeline Case*. Frankfurter was certainly never an admirer of the fair value rule in Smyth *v.* Ames. Yet he felt compelled to point out that the Black-Douglas-Murphy opinion, while denying the authority of the court to review the

[1]Decided January 29, 1877, 94 US 113, 24 L ed 77.

[2]Federal Power Commission *v.* Natural Gas Pipe line Co. (1942) 315 US 575, 42 PUR NS 129.

[3]Smyth *v.* Ames, decided March 7, 1898, 169 US 466, 42 L ed 819.

reasonableness of the Federal Power Commission (FPC) rate order in that case, was still trying to tell the FPC what to do about ignoring the fair value rule. In other words, they were trying to eat their cake of judicial rate supremacy and have it, too, in the form of judicial monitoring on the use of rate formula.

Another thing Frankfurter pointed out, which is commonly ignored by writers on the subject, is that the doctrine that state rate-fixing must not be confiscatory by judicial standards of due process was not an original doctrine proclaimed by Smyth *v.* Ames in 1898. It was first established by the same Chief Justice Waite, who wrote the majority opinion in the Munn Case in 1877. Nine years later, again writing the majority opinion of the court in the *Railroad Commission Case*,[4] the Chief Justice said:[5]

"While a state has power to fix the charges by railroad companies . . . such power is not unlimited" and further that "under pretense of regulating fares and freights, the state cannot require a railroad company to carry persons or property without reward, neither can it do that which in law amounts to a taking of private property for public use without just compensation, or without due process of law."

It was on the basis of that opinion by Chief Justice Waite in 1890, that the court, in the Milwaukee Railroad Case,[6] laid down the doctrine which virtually postulated the fixing of reasonable or justifiable rates and, therefore, the use of a rate base.

Foundation for Rates

Thus, the rate base concept was twice founded in case law, years before it was spelled out in such detail by the Smyth Case in 1898. For, after all, a rate base—any kind of a rate base — is simply a foundation upon which to erect a standard for measuring either the reasonableness of rates or whether they might be confiscatory. (I shall not here go into the distinction between the reasonableness and confiscation, which I am sure is familiar to all of you.) And in order to make that measurement intelligent, of course, you must also measure the reasonableness of the return and the reasonableness of the deductions and allowances for depreciation. In other words, as soon as you use the words "reasonable rates" (and nearly all of our federal and state laws do use those words) you have postulated the need for a rate base upon which to measure "reasonableness." More than that, you have postulated the need of some final judgment as to the ultimate reasonableness, which amounts to a reservation of judicial review.

Of course, it is quite permissible for a statute to go beyond such a general standard and spell out, in terms of formula, or other conditions, just what shall constitute "reasonable rates." The Ohio Legislature did that when it wrote a mandatory requirement for the use of reproduction cost value into the law, and the highest court of that state felt bound to follow it.[7]

All the *Smyth* Case did in 1898 was to lay down a rule of reason for use in determining fair value in terms of nonconfiscatory rate fixing. True, it went into considerable detail in setting forth factors to be considered—I will not take your time to enumerate them. But the court certainly did not attempt to dictate any set formula in the *Smyth* Case. On the contrary, the court plainly indicated that any combination of these standards, or even a single one of them, if the circumstances of the particular case warranted, might be used to test the claim of confiscation under the Fourteenth Amendment.

Hope Case Cited

A number of legal writers have somehow reached the firm conclusion that the fair value rule in Smyth *v.* Ames was overruled in practical effect, if not by formal expression of the U. S. Supreme Court majority in the Hope Natural Gas Co. Case.[8] I have never been able to join that view for the simple reason that what the U. S. Supreme Court majority actually did, in both the Pipeline and Hope cases (as distinguished from the dicta about the Fourteenth Amendment), could actually be reconciled with the fair value rule laid down in the *Smyth* Case. I think this viewpoint was very well stated by the Vermont Supreme Court in the New England Telephone & Telegraph Co. Case in 1949.[9]

After all, both the Hope and Pipeline decisions involved appeals from rate-fixing orders of the FPC under the Natural Gas Act. Under this act appeals may be taken to the United States circuit courts as a matter of right on the issue of "reasonableness" of the rates fixed, rather than on the narrower test of confiscation which would be applicable to rates fixed by a state commission. I will presently touch on what a considerable number of the highest state courts have to say about the scrapping of the "fair value" rule as applied to state commission rate orders.

But first I would like to comment on the questions raised by the so-called "end result" test laid down in the Hope Case, even as it applies to rates fixed by federal regulatory commissions under the statutory requirement that they must be just and reasonable. The questions, stated bluntly, are simply these: Is any rate base necessary? Has the U. S. Supreme Court in the Hope Case—and later decisions along the same line—given the federal commissions such discretion as to permit them to dispense with even the formality of explaining methods used, as long as the final product squares with the very general "end result" language in the Hope majority opinion, about allowing a utility enough return to continue to attract capital, etc.?

Judicial Review Would Be Mockery

If that is what the majority of the court held (and I do not believe such is the case), then the rate base is obsolete. And any judicial review is a needless mockery because the so-called expert judgment of the commission becomes conclusive upon the court. How the courts, under such a concept, could obtain enough information about the rates under review even to apply the limited test of the "end result" becomes a mystery. And if the rate base is unnecessary for federal commission rate making, *a fortiori* it becomes unnecessary for state commission rate making as far as the federal courts are concerned under the Fourteenth Amendment.

I am sorry, in a way, that no appeal could be taken to the U. S. Supreme Court for the Wisconsin Supreme Court decision in that very interesting City of Two Rivers telephone rate case.[10] For in that case, you may recall the Wisconsin commission tried to carry out this idea of refusing to reveal, even to the state appellate courts, what was the rational basis of its rate order or whether it even had any rational basis. In other words, it did away with the rate base, entirely, and said to the court, in effect, "those

[4]Stone *v.* Farmers Loan & Trust Co., decided Jan. 4, 1886, 116 US 307, 29 L ed 636.

[5]At 116 US 325, and 116 US 331.

[6]Chicago, Milwaukee & St. Paul R. Co. *v.* Minnesota Railroad Commission, 134 US 418, 458, 33 L ed 970, 982.

[7]Marietta *v.* Public Utilities Commission (1947) 148 Ohio Sup Ct 173, 71 PUR NS 186.

[8]Decided 1944, 320 US 591 PUR NS 193. Compare "Utility Regulation in the Light of the Hope Natural Gas Case," R. J. Hale, 44 Columbia Law Review 488; "The Demise of Fair Value," R. W. Harkeson, 42 Michigan Law Review 1049; "Smyth *v.* Ames in the State Courts, 1942-1952," Philip Mendelson, 29 Minnesota Law Review, and others. Another common assumption found in regulatory articles is that utilities and their rate critics have exchanged position several times on the subject of using reproduction cost as a rate base element. Except for the unusual circumstance in the Smyth Case, I can find no considerable body of utility industry opinion expressing any preference at any time for rigid adherence to a strict original cost basis for rate fixing.

[9]PUR NS 508, 115 Vt 494.

[10]Commonwealth Telephone Co. *v.* Public Service Commission (1948) 71 PUR NS 97, 252 Wis 2[illegible]

rates are reasonable because we say they are reasonable and you will have to take our word for it because we are experts." The Wisconsin courts struck down this bold attempt to defeat judicial review.

Just by way of reducing this idea of conclusive expert judgment to absurdity, let us take a somewhat facetious hypothetical example. Let us suppose that the FPC put several alternative computations of the basis on which it proposed to compute a reasonable return into an ordinary hat. Next, let us suppose that a nice little three-year-old blindfolded girl were asked to pick one of these numbers out of that hat. And let us suppose that the FPC thereafter found, as experts, that the "end result" of rates fixed on the rate basis selected by the little girl were just and reasonable. Can anyone seriously contend that the federal courts would stand by and give such an arbitrary and capricious method the benefit of any presumption of reasonableness no matter what the "end result" might be?

Review of No Practical Value

After all, it is all very well for a body of presumed experts to say "we have used a reasonable basis" or "we have found a reasonable" return. But "expertise" (to use the word given us by Justice Frankfurter in the Hope Case) is, as "expertise" does. And as Justice Jackson said, in his opinion in the same case, "If we are to hold that a given rate is reasonable just because the commission has said it was reasonable, review becomes a costly, time-consuming pageant of no practical value to anyone."

This same view was taken in a recent decision of the Eighth U. S. Circuit Court of Appeals, handed down on July 20, 1953, in setting aside a 5½ per cent return used by the FPC, on a comparative cost of capital basis, in fixing rates for the Northern Natural Gas Co. In that unanimous decision, Circuit Judge Woodrough, speaking for the court, said: "What is of importance is that we are unable from the reported findings to arrive at a reasoned conclusion that the 5½ per cent rate of return allowed by the commission is 'just and reasonable.' The commission has not sufficiently explained why it considers that rate reasonable . . ."

Then the circuit court went on to point out that virtually all the evidence in the record pointed a 6 per cent return rather than 5½ per cent, and the case was remanded to the FPC with more than a strong hint to do something about the inadequacy of the 5½ per cent return and to use some other basis in addition to comparative cost of capital.[11] While this Northern Natural Gas Case is still pending, I understand the FPC has since allowed a 6¼ per cent return in another gas rate case, so it may be that we will soon see this decision bearing fruit in the form of a future FPC regulatory policy. I would like to add one other point about that Northern Natural Gas Case; mainly that the FPC came pretty close to dispensing with the formality of fixing an original cost rate base, as such, when it keyed its decision exclusively to the cost of the company's capitalization as compared with capital cost of other gas companies.

Reviews 21 Court Decisions

But let us get back to the "ghost of Smyth *v.* Ames" and what has happened to the "fair value" rule in the state courts since the Hope Case. I have made an examination of key "post-Hope" decisions from 21 highest state courts. I will give you, briefly, the results by states. Out of 21 decisions examined, I have found acceptance of the "end result" dicta in the Hope Case in only four states, to date: Oklahoma, New Hampshire, New Mexico, and Utah.[12]

In 17 out of 21 state court cases, we have three different classifications of decisions, but all rejecting—in varying degree—the "end result" test in the Hope Case. In the first group we find continued adherence to the fair value rule in Smyth *v.* Ames. This group of decisions includes cases from Illinois, Maine, Maryland, Minnesota, New Jersey, North Dakota, Ohio, Pennsylvania, South Dakota, Vermont and Washington.[13] In the second group we have four state courts insisting that the commission use a reasonable rate base but not necessarily postulating a fair value rule: Arkansas, Georgia, Massachusetts, and Wisconsin.[14] In the third group are but two state court decisions which reject the "end result" test in the Hope Case, but which uphold their state commission rate orders in such a way as to make them, at least, reconcilable in a broad way with the alternative standards of fair value laid down in the Smyth Case. These are cases from Alabama and Idaho.[15]

And this lopsided box score of 17 out of 21 state court decisions, which refused to accept the "end result" test, does not tell the whole story. I could name a half-dozen other states where the commissions themselves are following the fair value rule so that there was no need of court appeals to correct commission interpretations: Colorado, Kansas, Montana, Nebraska, South Carolina, and Virginia. Of course in many of these states the fair value rule is written right into the regulatory statute. But I think this analysis does show that the "end result" test is by no means accepted by the states, and that the great weight of authority is looking in the opposite direction.

Rate Base Here to Stay

Finally, what lessons of future value can we get from this analysis of case law? I might state it in two sentences. The rate base is here to stay. And the state courts have refused to close the door on judicial review as to the reasonableness of commission rate making. I also had the honor of addressing this Section of Public Utility Law at the Cleveland convention in 1947. At that time I had occasion to recall that regulation over the years had gone through three distinct phases of evolution. First, the legislative rate-making period ushered in by the Munn Case; second, the judicial review period ushered in by Smyth *v.* Ames; and third, the emphasis on expert commission decision underlined by the Hope Case. Thus, all three constitutional branches of government have taken turns in shaping regulatory policy. I expressed some wonder at that time which branch would remain permanently in the dominant position. From the events that followed since that time, I would now say that the present outlook indicates that the courts are not going to give up their final say as to reasonableness

(Please turn to page 42)

[11] *Re* Northern Natural Gas Co. (FPC opinion, 1952) 95 PUR NS 289.

[12] These state decisions are cited as follows: Southwestern Bell Telephone Co. *v.* State (Okla Sup Ct 1951) 89 PUR NS 311; New England Telephone & Telegraph Co. *v.* New Hampshire (NH Sup Ct 1949) 78 PUR NS 67; State *v.* Mountain States Telephone & Telegraph Co. (NM Sup Ct 1950) 88 PUR NS 388; Utah Power & Light Co. *v.* Public Service Commission (Utah Sup Ct 1944) 56 PUR NS 136. In the New Hampshire Case, the court stated that the finding of a rate base is required by state law; but that it need not involve fair value, reproduction cost, or any other single formula.

[13] Illinois Bell Telephone Co. *v.* Commerce Commission (Ill Sup Ct 1953) 98 PUR NS 379; New England Telephone & Telegraph Co. *v.* Public Utilities Commission (Me Sup Jud Ct 1953) 98 PUR NS 326; Chesapeake & Potomac Telephone Co. *v.* Public Service Commission (Md Ct. App 1952) 97 PUR NS 50; *Re* Minneapolis Street Railway Co. (Minn Sup Ct 1949) 79 PUR NS 407; *Re* New Jersey Power & Light Co. (NJ Sup Ct 1952) 94 PUR NS 214; Northern States Power Co. *v.* Public Service Commission (ND Sup Ct 1944) 53 PUR NS 143; Marietta *v.* Public Utilities Commission (Ohio Sup Ct 1947) 71 PUR NS 186; Pittsburgh *v.* Pennsylvania Public Utility Commission (Pa Super Ct 1951) 88 PUR NS 70; Equitable Gas Co. *v.* Pennsylvania Public Utility Commission (Pa Super Ct 1947) 68 PUR NS 65; *Re* Northwestern Bell Telephone & Telegraph Co. (SD Sup Ct 1950) 85 PUR NS 368; *Re* New England Telephone & Telegraph Co. (Vt Sup Ct 1949) 79 PUR NS 508; State *v.* Pacific Telephone & Telegraph Co. (Wash Sup Ct 1947) 70 PUR NS 250.

[14] Fort Worth *v.* Southwestern Bell Telephone Co. (Ark Sup Ct 1952) 94 PUR NS 214; Public Service Commission *v.* Atlanta Gas Light Co. (Ga Sup Ct 1949) 82 PUR NS 321; Lowell Gas Co. *v.* Department of Public Utilities (Mass Sup Jud Ct 1949) 78 PUR NS 506; Commonwealth Telephone Co. *v.* Public Service Commission (Wis Sup Ct 1948) 71 PUR NS 97.

[15] Birmingham Electric Co. *v.* Public Service Commission (Ala Sup Ct 1950) 254 Ala 119; *Re* Pacific Telephone & Telegraph Co. (Idaho Sup Ct) 92 PUR NS 229.

STANDARD ACCOUNTING
SMALL COMPANIES

Introduction by

RAY J. RIORDAN, Secretary
Wisconsin State Telephone Association

THE CONTINUING demand upon all telephone companies for expansion and improvement programs no longer permits negligence in record keeping if there is to be a survival of the small telephone company. The want for additional financing has brought home to managers and owners of many such companies the fact that money will not be forthcoming unless the financier, be it banker or government agency, can be offered an intelligent set of records that reveals the condition of their properties and some indication that the companies are capable of using the money to the advantage of subscriber and investor alike.

Too many small companies have left the hands of private owners, or groups of local stockholders, simply because the matter of maintaining a proper set of books was relegated to a position of secondary importance so long that when the time of reckoning arrived—the time that need for higher rates was all apparent—there were no records to support the investment and to prove the need for more revenue. Out of sheer desperation properties were sold for the want of a good set of books.

Telephone accounting has, for some reason, remained the enigma of the business even to many veterans in the industry. Perhaps this is because a few people unacquainted with utility bookkeeping have not taken the time to tell the accountant what it was about that phase of operations that really bothered them, and too few accountants have taken the time to devise practical methods applicable to telephone requirements.

Maintaining the belief that the problem is not insurmountable, that a streamlined system answering needs of regulating bodies and small companies alike was within the realm of possibility, the Wisconsin State Telephone Association approached A. G. Kiesling, a certified public accountant and experienced telephone accountant. The association asked him to devote time and effort to a project that would result in a set of books that would be sufficient to fill requirements of the small company, accurate to satisfy regulatory commissions and financial houses, and simplified to the extent that the management of small companies would no longer be alarmed by the awesome task of balancing debits and credits.

It is the belief of the Wisconsin association directors that Mr. Kiesling has accomplished that end, and since other associations have viewed and approved the system we have become more firm in that conviction.

To give the model system of bookkeeping forms the test of fire they were placed in the hands of a novice in accounting — a small telephone company operator totally unfamiliar with the pitfalls and snares of the ledger and journal sheet. With a minimum of initial coaching he followed the procedures outlined and at the end of a 12-month period reported no difficulty and produced a set of records that will bear scrutiny without condemnation. The system left the obstacle course with flying colors.

Undoubtedly, there are many procedures comparable to Mr. Kiesling's and equally as effective, but to the small company that does not follow any or that still approaches the task of keeping books with trepidation, here's a means of making the job easier.

by
A. G. KIESLING

THOSE OF US who have had occasion to work with small and medium-sized telephone companies in recent years have witnessed the ever increasing complexity of the accounting and bookkeeping problems of these companies.

There are many who feel that this situation has come about suddenly and that the commissions and taxing authorities have recently laid down some rather stringent accounting requirements. Actually what is happening, often in connection with a rate case or a financing program, is that these companies are being asked to appear before their commissions with detailed figures and facts about their operations. Usually a company finds that it has not kept its books so as to be able to meet these specific requests and, as a result, it is embarrassed and annoyed at the "red tape" suddenly encountered.

It cannot be denied that the growth and specialization of business today has caused our various commissions to request more information in connection with the regulation of utilities. And we all know that our taxing authorities do demand extensive and exacting tax returns from everybody.

Above and beyond all of these very good reasons for the bookkeeping problems of today, it is increasingly evident that those individuals charged with the responsibility of managing a company need, more than ever before, records and data which are enlightening with respect to the operations and financial position of their company. If one considers the rela-

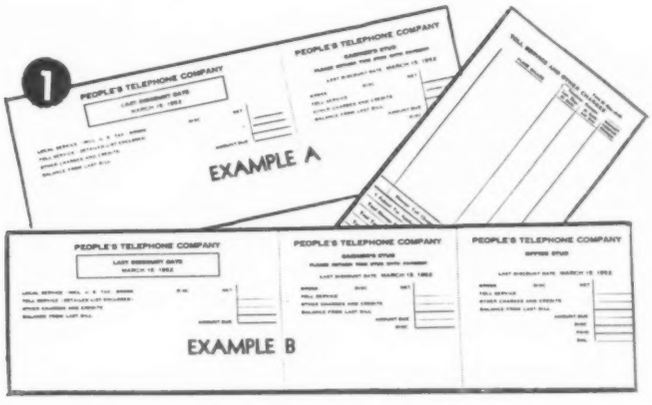
SYSTEMS *for*

tively high investment per telephone and the very narrow limits within which a company must operate with respect to its costs and its net earnings, then it is not difficult to understand the need for good financial and operating records. In fact, there is no other industry or commercial activity so dependent upon accounting records for its successful operation as the utility industry.

From time to time various organizations and individuals have come to the assistance of these companies by offering accounting forms and systems designed to meet their needs. While these forms have been very helpful, it has been found that the people responsible for keeping the books of a company have had difficulty in distinguishing between a strictly cash receipts and disbursements type of accounting and the so-called accrual basis of accounting. Likewise, it has been observed time and again that the standard accounting theories and procedures as taught in secondary schools and colleges are not adaptable to the specialized field of telephone accounting. As a result, the records of many companies, while diligently kept, have not provided essential data on maintenance, plant removals, and additions to plant.

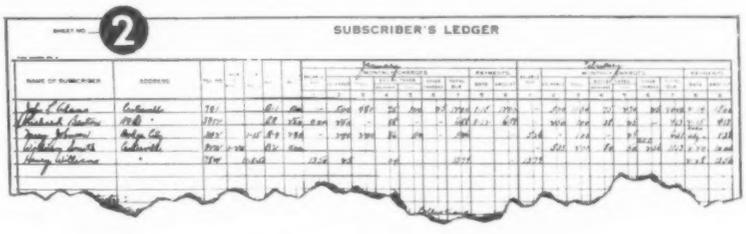
Keeping in mind past difficulties and problems, the accounting procedure and forms presented hereafter have been designed to permit the individual in charge of the books to enter ordinary day-by-day transactions and prepare summaries of cash receipts and disbursements without special outside assistance. Further, if a company keeps the records as outlined then it would be possible for any experienced telephone accountant to close the books and prepare financial statements periodically, using a minimum amount of time and effort.

The ensuing section of this article includes illustrations of various forms with a brief description of the purpose and use of each form shown. It should be remembered when reviewing these forms that they have been designed to meet accounting classifications prescribed by various state commissions. The account titles and terminology are pretty generally standardized so that, basically, all forms can be used to advantage in almost every instance. Because of the necessity to reduce the size of the forms to fit into these pages, it may be necessary to use a magnifying glass on some of the illustrations.



1. Subscriber Telephone Bill

• Two types of telephone bills are shown, mainly for comparison purposes. Example "A" is a two-part bill intended for use with the Subscribers Ledger (shown elsewhere). This two-part bill is prepared by taking billing information directly from each customer's account as shown in the ledger after the ledger has been balanced. Example "B" is a form of bill used where customer accounts are kept on a "stub billing" basis and no ledger is maintained. The third stub marked "Office" is cut from the bill before it is mailed to the customer and becomes the accounting record on which all payments, adjustments, etc., are posted. Both bill forms shown are suitable for use with addressograph equipment which can be set up to show with only one imprint the monthly rental and tax as well as the name, address and telephone number of the subscriber. The subscriber bill provides the space for name and address at the lower portion of the form. This permits the use of government stamped window envelopes, a time saving device particularly for small companies that make a practice of stamping and addressing envelopes by hand.



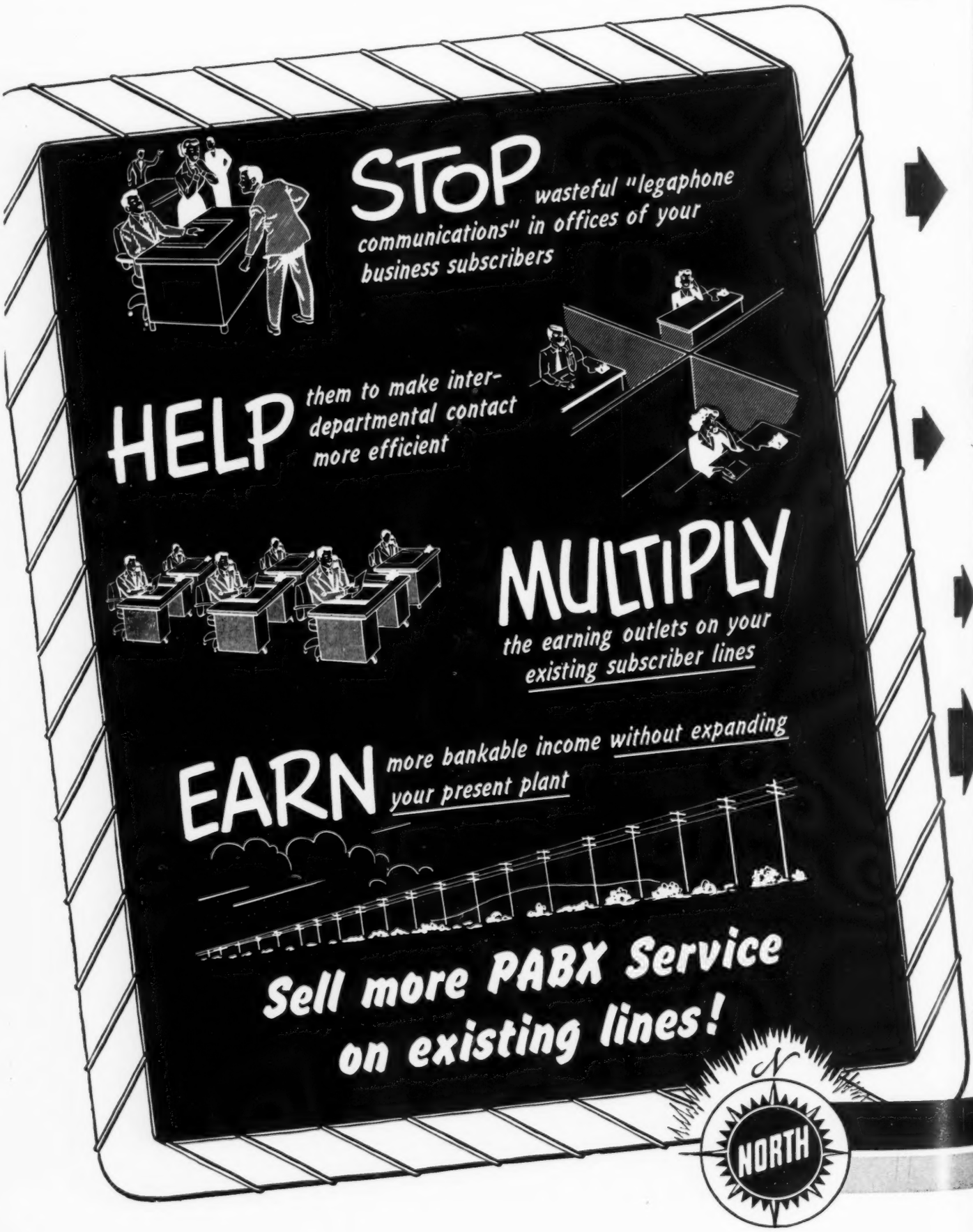
2. Subscribers Ledger

• At the present time there are a large number of companies who prefer to use a Subscribers Ledger for keeping a complete record of each telephone customer. The form of ledger shown in this system has proved to be the most convenient and satisfactory for the average telephone company. The complete ledger consists of one long sheet and supplemental short sheets and provides all billing information and balances for a 12-month period. The subscribers can be listed alphabetically or by telephone number whichever is considered to be the easier for reference. Cash collections are posted directly in the "payments" column and totals checked with the bank deposit slip, thus eliminating a separate customer cash receipts book.

It is suggested that any company proposing to adopt the "stub billing" method of customer accounting should consult with someone experienced in such procedure before making any change. This method of keeping customer records has some definite advantages; however it does require more accounting control work and is most successful where a full time billing clerk or cashier is maintained.

(Please turn to page 24)

Notes on Extending


STOP wasteful "legaphone communications" in offices of your business subscribers
HELP them to make inter-departmental contact more efficient
MULTIPLY the earning outlets on your existing subscriber lines
EARN more bankable income without expanding your present plant
Sell more PABX Service on existing lines!
NORTH

Telephone System Profits

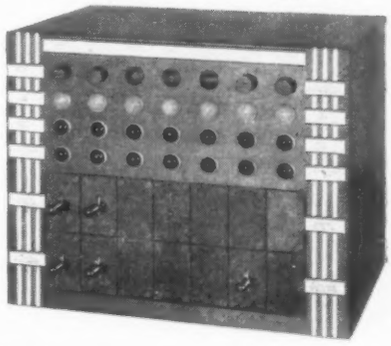
In most communities served by telephone companies like yours, there are substantial income opportunities in the commercial lines on which *additional service* can be sold with PABX equipment. If you have not ploughed this rich field lately, you may be overlooking revenue that should be yours.

NORTH PUSHBUTTON KEY BOX

"Step Up" Your Small Subscribers

The North key-type PABX is ideal wherever requirements will not exceed 6 CO trunks and 20 stations. All stations are equipped to originate, answer, hold and transfer calls. Subscriber can have generous intra-office traffic with minimum use of lines and links. Typical prospects are accounting departments, bus, railway and air terminals, real estate or law offices, newspapers, department stores, produce or dairy plants, factories, etc.

NORTH "TURRET" CABINET



Expand Large Subscribers' Service

For general office communications involving a greater number of lines, North PABX may be installed to provide automatic service unattended or with various forms of operator attendance. Where incoming "city call" traffic is light in ratio to intercom, the "turret" type attendant cabinet shown at right is recommended. Otherwise, a full multiple-type cabinet may be used.

NORTH "100" PABX WITH MULTIPLE CABINET

Provide Fully Automatic or Attendant Systems

North PABX attended 100-line to 1,000-line automatic exchanges allow for expansion all the way. Everything from 30 lines up can provide two-party service, pick-up answering service, watchman's recording, executive key calling and right-of-way, code call, night transfer, conference and many other special features which subscribers appreciate.

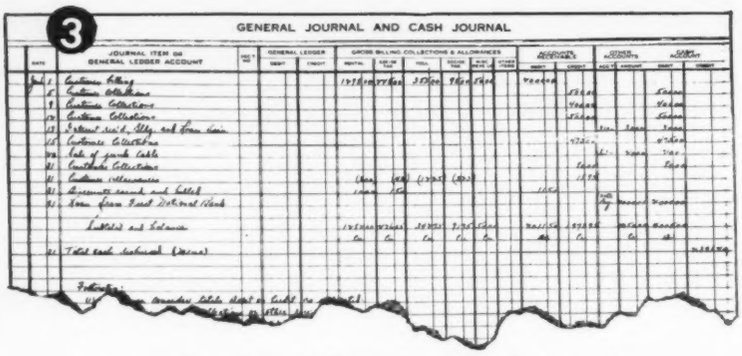
Sell 'em North PABX

Ask for PABX Bulletin SF 265

THE NORTH ELECTRIC MANUFACTURING COMPANY

Originators of ***ALL RELAY*** *Systems of Automatic Switching*

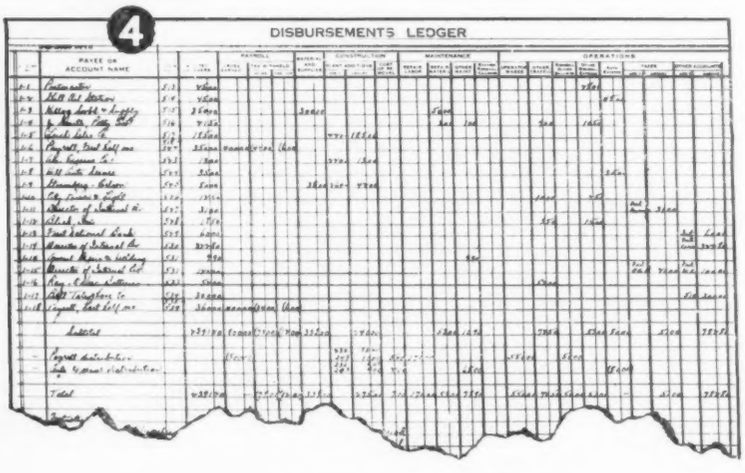
655 South Market Street, Galion, Ohio, U.S.A.



3. General Journal and Cash Journal

• It was stated earlier that the objective of this accounting system was to permit recording of cash receipts and disbursements as they occurred and at the same time provide data necessary for closing the books. Consequently, in the actual use of this journal, postings are made in the first two ruled columns designated "General Ledger" only when opening a set of books, recording special adjustments, and at the time of closing the books when special entries are made for such items as depreciation, taxes, interest, etc.

On this Journal the regular monthly posting begins with recording customer billing. Total billing amounts as shown by the Subscribers Ledger are posted in the columns provided under the heading Gross Billing—Collections & Allowances. A contra entry is then made for the total amount billed to customers in the Debit column under Accounts Receivable. All cash receipts from customers, paystation receipts, and any allowances or adjustments, should be entered chronologically. Each day when cash is deposited in the bank an entry should be made in this Journal with such deposit supported by a deposit slip or bank book entry. A new Journal sheet should be started each month.



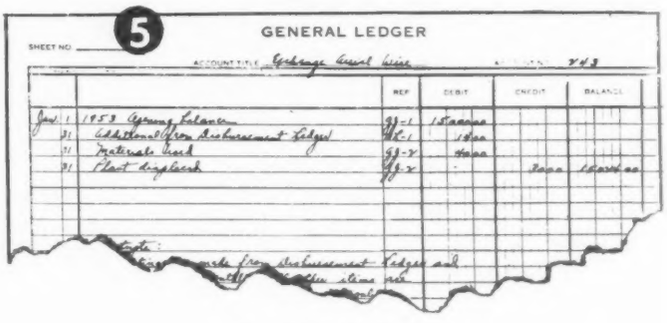
4. Disbursement Ledger

• This form provides for entering all cash disbursements as they occur with one line used for each check drawn. The amount of each check is entered in the "Audited Vouchers" column, and the distribution of this amount shown in the appropriate column or columns which follow. It should be noted that this ledger sheet provides for the following general classification of expenditures:

Payroll Materials & Supplies Construction
Maintenance Operations

Under these major headings there are sufficient subdivisions provided to allow for a proper classification of most ordinary expenditures. A special column is provided at the far right designated "Other Accounts." In this column can be posted those items which do not occur repeatedly throughout the month or are unusual in nature. For example, the monthly Bell settlement would be entered in this column and marked as Account—510. Similarly interest payments or loan repayments, would be recorded in this column.

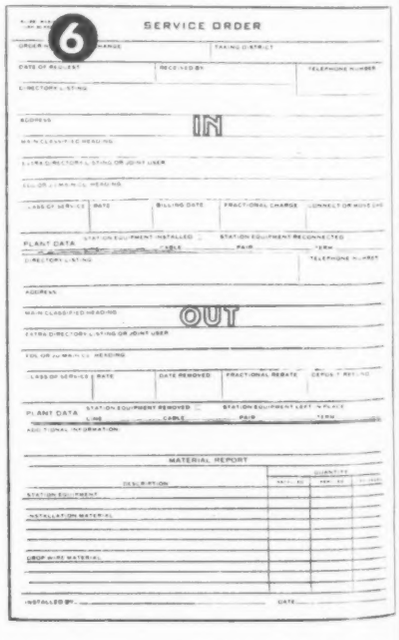
The payroll section is designed to show essential information as to gross wages, taxes and other items withheld. It should be noted that all of the postings in the "Payroll" column are intended to balance with pay checks written as shown in the "Audited Vouchers" column. The distribution of gross payroll charges is accomplished at the close of each month by entering on a separate line a credit or contra amount in the "gross earned" column equivalent to the total payroll and distributing this same amount to construction, maintenance, and operations in accordance with the time sheets.



5. General Ledger

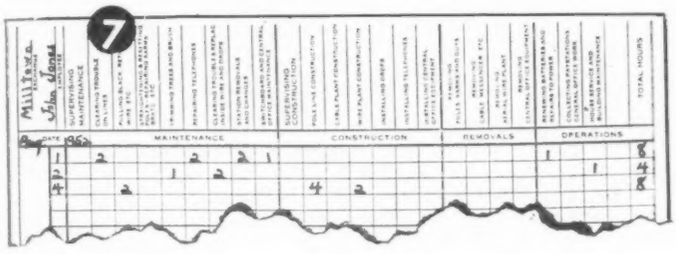
• Maintaining a General Ledger has proved to be advantageous for all companies regardless of size. Such a ledger provides a convenient permanent record of all assets and liabilities, usually for many years. Further, it is the acceptable form for carrying financial and operating accounts, particularly when subject to possible investigation or audit by taxing and regulatory bodies. A ledger sheet is set up for each prescribed account used and, after recording opening entries, postings are made only at the time of closing the books. Entries at the close of an accounting period are taken from totals obtained from the cash journal, disbursement ledger or from special general journal entries.

6. Service Order for Telephone Installation, Removal or Change



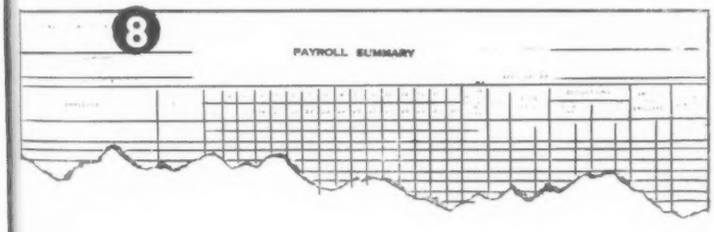
• Every telephone company should use a special service order form to record all work done in connection with an installation, removal or change of telephone service. The advantage of using such a form lies in the fact that it brings together in one place all important information needed such as, correct name of customer, telephone number, class of service, rate to be charged and special connection charges. In addition it provides space for reporting materials used in making an installation or the removal of a telephone from service. The form presented here is designed with separate "In" and "Out" sections and it can be readily inter-

preted. Further, it is adaptable for use in connection with the preparation of directory manuscripts. Many companies are now using a service order system and are preparing one extra copy for directory purposes. This copy is sent directly to the directory publishing company, thus providing a current subscriber list and saving the telephone company the last minute rush so often encountered a few days before directory closing date.



7. Time Sheet

• The time sheet presented in this system has been used by telephone companies as a simplified means of recording daily the hours worked by each plant man. This sheet may be used for weekly, bi-weekly, semi-monthly, or monthly reporting by merely indicating each day worked in the first column and then marking down hours worked under the various headings which are representative of work performed that day. It has been found that the classifications of work as shown cover practically all normal telephone activities. A separate sheet is used for each plant man or supervisor and a new sheet is started for each pay period.

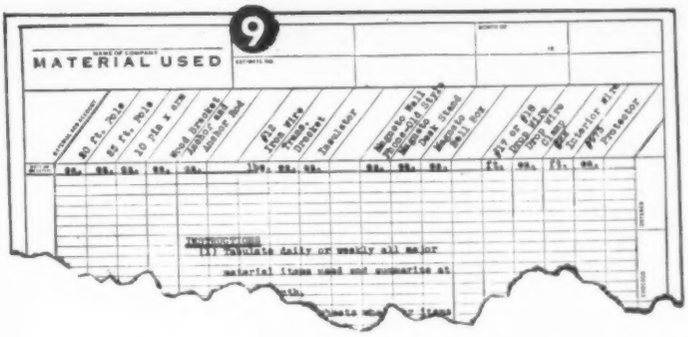


8. Payroll Summary

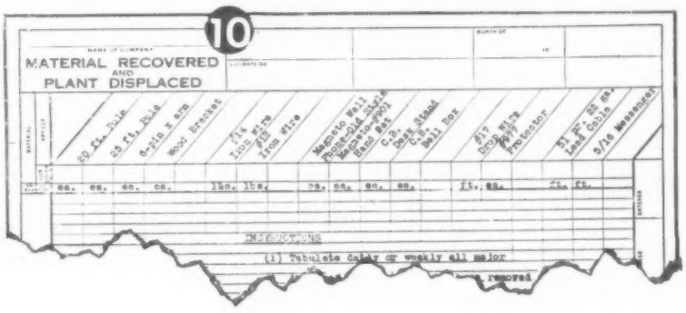
• Under existing wage and hour regulations it is important that a time sheet be kept and further that the hours, rate of pay and earnings calculations be entered on a payroll summary form. The form shown is commonly used and will prove to be very convenient for keeping necessary payroll data. A separate sheet should be prepared for each pay period. All employes should be listed and hours carefully posted from time sheets. Overtime hours should be set out separately either by posting on the top section of each line or by encircling the hours and showing information at the bottom of the form. Under "payroll deductions" one blank column is available for withholding income tax and for making any other deductions from the employe's pay such as hospital insurance. This Payroll Summary Form may be used also for keeping quarterly and annual earnings record of each employe and for reporting to the government by simply setting up a separate sheet for each person to whom wages were paid and posting from the regular payroll summary prepared each pay period.

9. Material Used

• For those companies keeping a material and supplies or "stores" account it is necessary to report materials used in order that all material costs may be charged to proper maintenance and construction accounts. The Material Used Form is in reality a tally sheet with descriptive space at the



top of each column for entering material items such as 20-foot poles, 10-pin cross-arms, H-85 iron wire, etc. As materials are drawn from the storeroom and used, the quantities are posted on lines below, then summarized, priced and totaled at the end of the month. It is suggested that telephones and installation materials used in connection therewith be posted on each service order and then in turn summarized on one of these forms.



10. Material Recovered and Plant Displaced

• In order to keep an accurate account of telephone plant and property in service, some record of plant removed, abandoned or destroyed must be maintained. Accounting classifications issued by the various state commissions usually define units of property and, therefore, the items of plant to be listed in the material description section should conform with these prescribed property units. The form shown is designed to set down conveniently all plant units which are withdrawn from service and also to show the salvage value of these units or any other good material items reused or returned to the storeroom for future use.

Too much emphasis cannot be placed upon the importance of recording all plant units removed from service and then indicating whether any of these items were reused or returned to the storeroom as "good." This phase of reporting by the plantman is often overlooked, yet there cannot be an accurate statement of Telephone Plant in Service unless the value of the old plant replaced is removed from the books.

Closing Comments

It would be impractical to try and cover all possible accounting entries which would be made on these forms and, therefore, the above comments are intended to give only a general understanding of their application in this accounting system. Like all procedures, some careful study is required in order to fully appreciate the scope and advantages of the material presented. It is felt that the real advantage of this system rests upon the fact that it can be maintained currently on a cash receipts and disbursements basis by telephone company personnel not having specialized accounting training and from these same records, regular closings can be made providing necessary information for financial statements, tax returns and annual reports.

All forms described in this article are carried in stock and may be obtained from the Blied Printing Co., Madison, Wis. If sample forms are desired they may be obtained by writing to TELEPHONY or directly to the author.

ABOVE: Examining the new emergency reporting telephone station are, left to right, DONALD KUHL, sales and servicing representative and JASPER DORSEY, South Florida manager, both of Southern Bell Telephone & Telegraph Co., BEN DEMBY, Miami communications superintendent and Miami city manager, E. A. EVANS.

BELOW: STUART ZIMMERMAN (center), Southern Bell's Miami plant manager answers an "emergency call" as PAUL McCANDLESS (right), Southern Bell's Miami district manager and BEN DEMBY, Miami communicaction superintendent look on.

Communications

Emergency Reporting System Installed by Southern Bell

By C. J. TUCKER JR.
General Sales Manager
Southern Bell Telephone & Telegraph Co.

A NEW FIRE and emergency reporting system utilizing telephone facilities for the general public to make verbal reports of fires and other emergencies—the first of its kind in the nation—was put into service in Miami, Fla., on August 1, by Southern Bell Telephone & Telegraph Co.

The new system was developed by Southern Bell engineers in cooperation with American Telephone & Telegraph Co. engineers. Owned and maintained by Southern Bell, the system in general consists of two 605-A manual switchboard sections located in the central fire department headquarters of Miami with approximately 275 emergency reporting stations located throughout the city.

Each station line is under continuous test and in the event of trouble on one of these lines, an audible and visual signal is brought in at the fire department headquarters indicating the particular line in trouble. In addition, a common alarm is extended to the local telephone company test board. This feature provides faster maintenance since the fire department and the telephone company both know immediately when trouble occurs.

The emergency reporting stations are comprised of regular outdoor telephone sets. The door of these sets is equipped with a spring to automatically close them when they are not in use.

Generally, the emergency reporting stations are located at intersections which have traffic lights and are mounted on suitable poles or pedestals. They are identified by a sign with red letters on a white background which reads "Emergency Telephone—Fire and Police." A person desiring to report an emergency merely opens the door of the emergency station and lifts the receiver. This causes a light to appear on the switchboard and stay on until the attendant answers the call.

A group of rotary trunk lines associated with the fire reporting number listed in the telephone directory also terminates in the emergency reporting switchboard.

Under this system, the person reporting the emergency can describe fully and quickly the type, nature and extent of the emergency to the attendant. This provides a fast means of reporting an emergency and rapid dis-

(Please turn to page 38)

Protect Miami

Two-Way Radio Network Aid in Public Safety Program

By ROBERT COTTER
Engineering Aid
Miami Division of Communications

AMONG the leading pioneer cities in the field of public safety two-way radio is Miami, Fla., with Ben Demby, superintendent of communications, serving as the guiding light. This fast growing southern metropolis can rightfully claim many firsts in the development of police and radio systems which are today recognized and accepted as indispensable elements of any law enforcement or fire protection organization.

In the early "thirties," the sudden upswing of the city's growth curve, coincident with the gradual return of good times and healthy economic conditions to the United States, turned the attentions of the city fathers toward a streamlining of their public safety management. Radio communications played no minor part in this modernization. Radio was first effectively employed in the police and fire operations of Miami in 1933. In this initial system, the transmitter was installed on Collins Island, Miami Beach, and remotely controlled by police headquarters in downtown Miami. Dispatching was accomplished by the desk sergeant, lieutenant or what other officer might be in headquarters at the time.

Starting in a small way and with a limited budget, maintenance of nine one-way patrol cars was handled on a lease basis with a local electric company. This method of operation was continued until the end of 1935 which then marked the beginning of a new

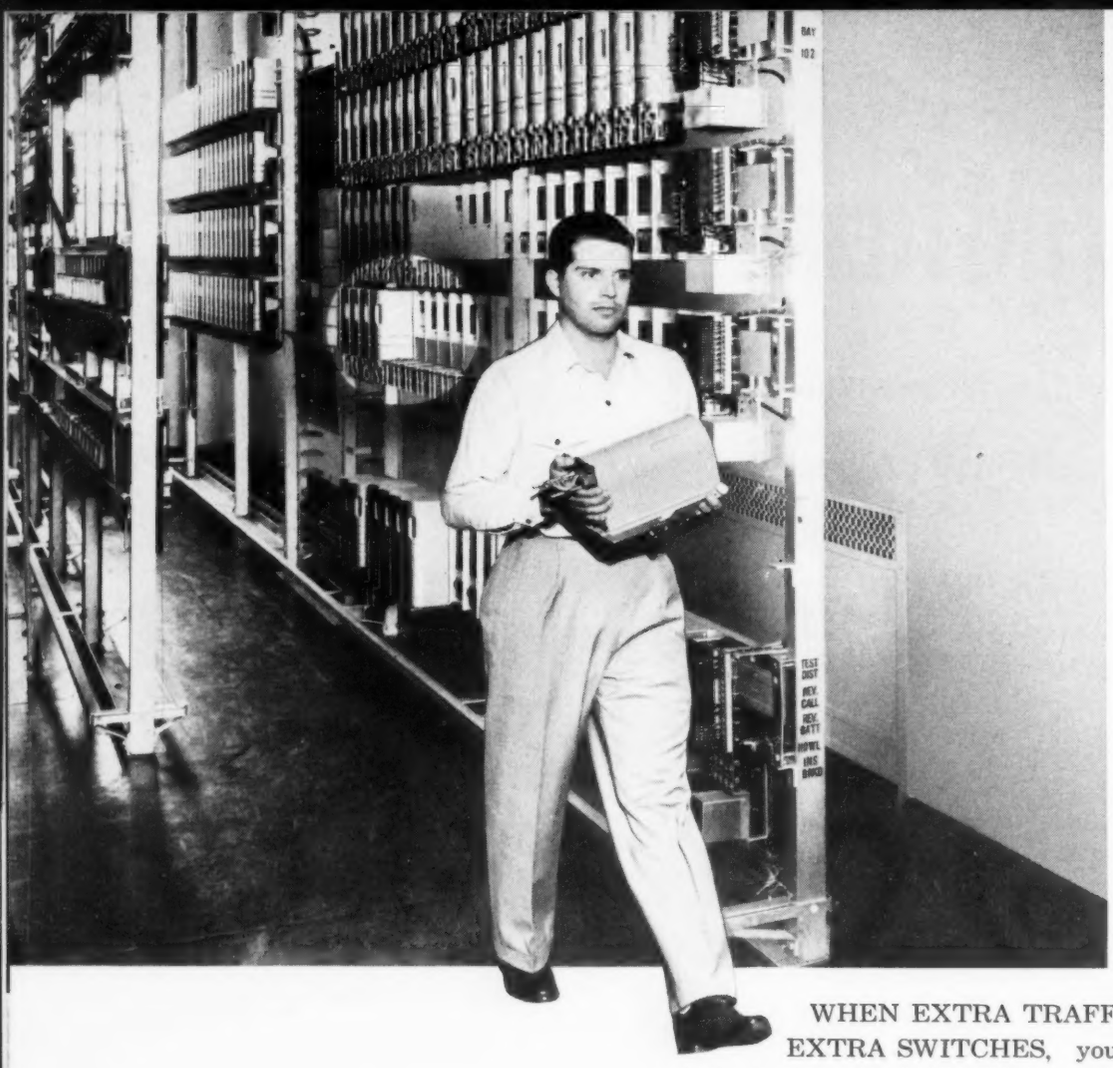
(Please turn to page 38)

1. BEN DEMBY, superintendent of communications of Miami, coordinating a recent civil defense exercise via a Handie-Talkie radio-telephone.

2. Policeman First Class H. T. SHAW and one of the 350 radio equipped Miami vehicles. Transmitter and receiver equipment are installed saddlebag fashion on the motorcycle. Combination loudspeaker-control head is installed in front of the officer with microphone readily accessible in its gas tank mounting bracket.

3. The author, ROBERT COTTER, assistant to Superintendent Ben Demby, operating the front mount Uni-Channel installed in a division of communications utility car.

4. BEN DEMBY demonstrates features of the Miami fire department's two-way radio system to Chief CHASE (right).



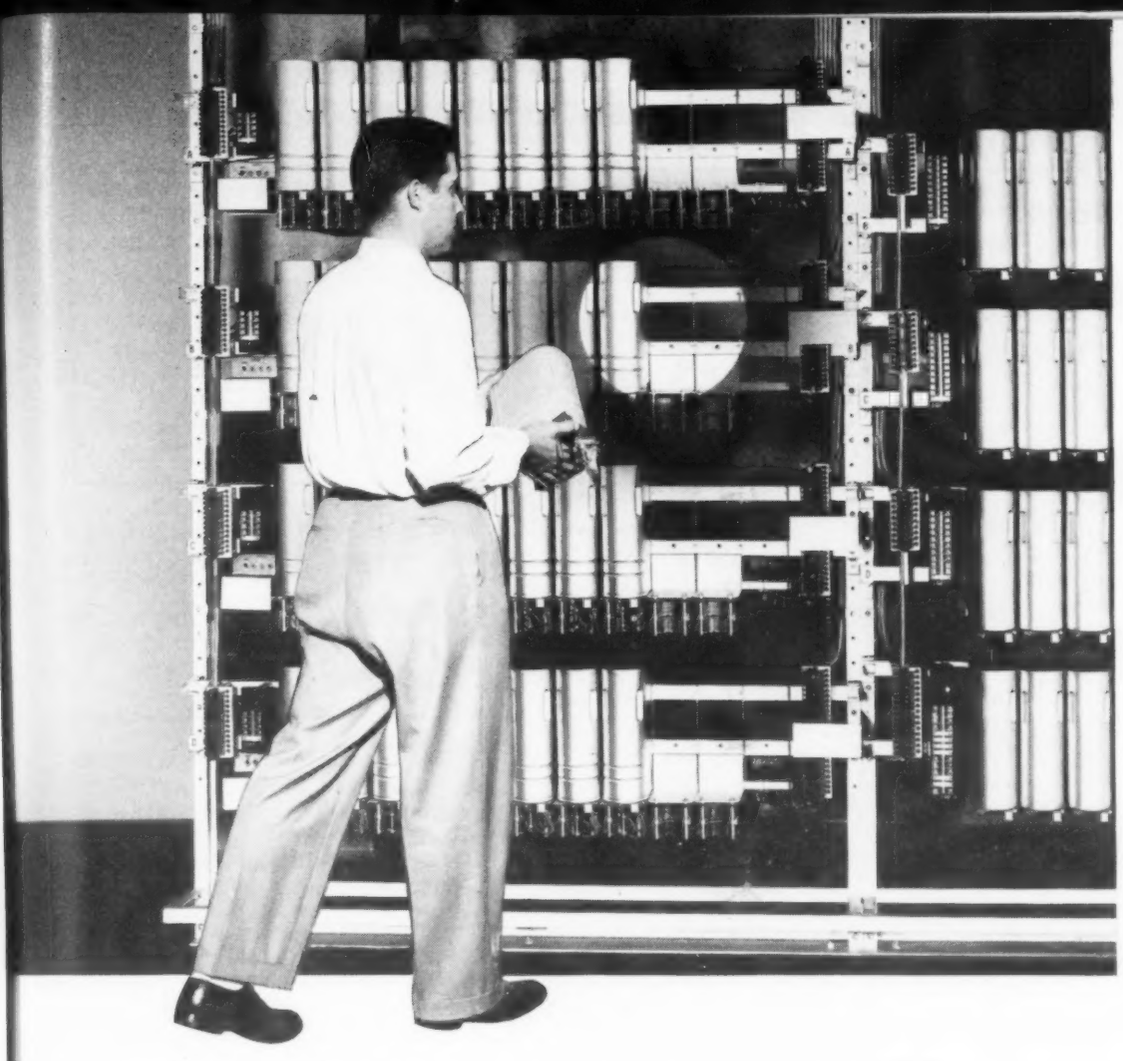
WHEN EXTRA TRAFFIC DEMANDS EXTRA SWITCHES, you can take them quickly from a point where they can be spared, then . . .

Easy-to-Move Switches spotlight Strowger

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Re
Sender-Translator Operation . . . Machine Switching Automatic Dial Sy
Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Co

Distributors in U. S. and Possessions: Automatic Electric Sales Corpo
Export Distributors: International Automatic Electric Corpora
1033 West Van Buren Street, Chicago 7, U. S. A.



U CAN JACK THEM IN EASILY at the place where they are required.

e*Automatic flexibility*

When conditions change suddenly and exchanges must change with them, men who bought Strowger Automatic thank their lucky stars. For nothing—*nothing*—is as flexible as the Strowger switch!

You can meet changes quickly, easily, by merely sliding Strowger switches off shelves where they can be spared and jacking them in where you need them. They're *easy to move!* There's no mechanical link between switches, no critical adjustment on the shelves. Associated relays are mounted on the switches and are automatically moved with them; there's no need to track down relays, *no rewiring*. Think of the time, money, and labor this can save you!

You'll appreciate easy-to-move Strowger switches when one of your exchanges is suddenly overloaded due to swift expansion in its area, when a trunking group becomes overloaded as the season starts in a resort section, and when other unforeseen problems spring up. Then, by merely moving switches from another exchange or group, you'll speedily correct the situation. . . . All over the world, Strowger flexibility is meeting changing conditions with ease and keeping costs down. Invest wisely—buy Strowger Automatic.

THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

WE RECEIVED an interesting report the other day of the method used by one large operating company in clearing its aerial cable trouble.

When cable trouble occurs, it is promptly located, the sheath opened and dried out with desiccant. Then new desiccant is placed in the opening and it is closed by wrapping with rubber and friction or special tapes. Such an arrangement clears the trouble with the least possible delay and reduces service interruptions to a minimum.

Later, permanent repairs are made by a special crew of two men and a light installation type truck. In most cases, repairs can be made from a ladder and it is not necessary to swing a platform.

The sheath is removed and the insulation of the conductors repaired, if necessary, and repacked with new desiccant. A split sleeve is then installed, using a bottled gas type torch. The gas is contained in a small tank that can be carried up the pole by the repairman. Split sleeves up to 2½ inches in diameter are installed in this manner.

It would appear that a similar arrangement could be used to advantage by many small companies in the Independent telephone industry that do not have a regular cable splicer on their payroll. Any qualified repairman can be instructed in a comparatively short time to install a split sleeve when using this torch method.

• • •

It has been said that you are getting along in years when it takes you twice as long to rest and only half as long to get tired.

• • •

We recently received a nice letter from Thomas L. Keathley, district construction supervisor for the Southwestern Bell Telephone Co. at Huntsville, Tex., in which he advises us that he enjoys reading our column in TELEPHONY. Mr. Keathley was a colonel in the U. S. Signal Corps during the last war and was on duty with the Signal Corps Plant Engineering Agency in Philadelphia, and the South Pacific.

• • •

A new type of cable-fault finder, recently placed on the market, is designed for locating open circuits or low and high resistance shorts of 10,000 ohms, or less, in rubber, neoprene, thermoplastic or similar jacketed cables. (See cut below.)

Completely portable, the transmitter and receiver units operate on easily replaceable dry cells.

When in use, signals generated by the transmitter create an electromagnetic or an electrostatic field around the cable being tested. The receiver picks up this field through its antenna-like probe and converts it into an audible sound in the earphones. Since the intensity of the field created around the cable by the transmitter will change or terminate at the point of the fault, corresponding variations in the earphones' signal accurately locate the trouble spot.

Preliminary tests at the transmitter, when its leads are being connected to the cable under test, pre-identifies the fault as an open, a dead short, or a high resistance short of 10,000 ohms or less.

Net weight of the complete set, including a sturdy cast aluminum carrying case, is 23 pounds.

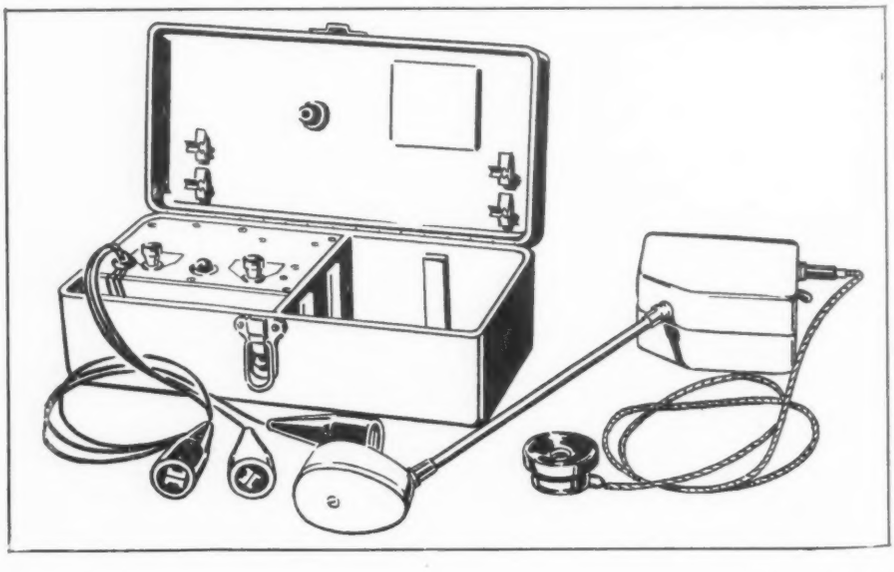
• • •

The writer recently had an urgent need for some accurate as well as practical information on how various types of dial switching systems connect into and operate with 3-CL type switchboards of the Bell System's dialing plan.

Accompanied by Signal Corps engineers W. T. Kennedy and T. C. Lindamood, we drove from Washington, D.C., to York, Pa., where, through the courtesy of George B. Rudy Jr., general manager of the York Telephone & Telegraph Co., Dan Seitz took us under his wing for two most pleasant and instructive days.

Dan is one telephone man who never goes part way in anything. When he gives anyone information, it is not only reliable, but it is also complete.

The York company has a network of well-run exchanges that connect into the Bell 3-CL switchboard located in York as a toll outlet.



We visited the main exchange in York and several of its satellites located in the surrounding community. Engineers Ruth and Baker were most helpful in answering our numerous perplexing questions.

While on this trip, we also visited the Harrisburg office of the Bell Telephone Co. of Pennsylvania. Commercial supervisor of Independent company relations, Lane S. Hart III, and engineers Corby and Smith also gave us a wealth of tried and proved information which can be used to good advantage in our work.

Someone has said that if you want a job done, give it to a busy man. We might add that if you want reliable information, also go to a busy man. These men were all "up to their ears" in work, out they were most courteous and did not hesitate to give us the necessary time and information. That is why we always like all telephone men, Independent and Bell, alike.

PLANT MAN'S QUIZ

by RAY BLAIN, Technical Editor

Q. When nitrogen gas is used to flash-test a cable, what arrangement should be used to close the opening where the gas was admitted to the lead sleeve?

A. First, permit the gas to escape so as to reduce the pressure within the cable.

Next, close the opening by the use of a special plug provided for this purpose and seal with solder. Cable trouble may result if this opening is not closed properly.

Some operating companies consider it a good practice to install a gas valve permanently in each splice on all main cables, say, 900 pairs and larger. Then, later, if it is ever necessary to move this splice, it can be flash-tested easily to make certain that trouble has not been caused by cracking the solder on the splice.

• • •

Q. When we solder a jumper wire on galvanized line wire the connection rusts and becomes noisy within a few months. This occurs even when the connection is well taped. What precautions are recommended in order to prevent this type of trouble?

A. It is assumed that the galvanized surface of the wire is scraped so as to expose base metal that will in time rust unless the connection is sealed with solder.

It is suggested that instead of soldering these connections, they be made by the use of compression type half taps. These half taps are split so that there is no need of cutting the line wire to make the connection.

• • •

Q. We are frequently requested to place underground service connections to residences, but subscribers usually object to the digging of a trench through the lawn. What is the best method of handling situations of this type?

A. Usually, if you explain to the property owner just how the work will be performed, the necessary permission can be obtained.

Dig the trench carefully and no larger nor deeper than is absolutely necessary. The sod should be carefully removed and placed on boards so that it can be replaced after the trench is backfilled and tamped. The loose dirt that is removed from the trench should be stored on canvas until it is needed.

When the sod has been replaced, it is necessary to keep it well watered for several days.

Horizontal type earth augers or pipe pushers can often be used to advantage to avoid digging up the lawn in the provision of underground service entrances.

• • •

Q. We frequently have serious water leakage into basements where underground conduit enters the building wall. What precautions can be taken to correct this condition?

A. First make certain that the conduit is well sealed in the building wall.

Then seal the space around the cable in the conduit to make sure that water cannot seep into the building through the duct. This can be done by packing oakum around the cable and pushing it back several inches into the conduit.

Finally, fill the duct flush with a special non-hardening compound that can be procured from your telephone supply house.

• • •

Q. Can you advise us as to the proper method of recovering buried cable in order to avoid injury to the sheath?

A. The removal of buried cable is not generally recommended as the labor cost will, in most cases, exceed the value of the cable.

If, in your case, there is some special reason for recovery of the cable in question, then it is suggested that it be dug out carefully by hand.

If you have the exact location of the cable, perhaps the cost can be reduced somewhat by removing the surface with a bulldozer and then finishing the operation by the use of hand shovels.

• • •

Q. Will it be possible for a metallic rural line to become unbalanced to such an extent as to cause serious transmission trouble?

A. Unbalance in any line is certain to result in inferior transmission. To make a transposition system effective, it is most essential that all lines be balanced to ground and also to any parallel circuit that may be on the same lead.

To properly balance a circuit, the two wires must be as nearly identical as possible. In order to assure balance, they should be of equal resistance and have the same insulation resistance to ground. The two wires should be of the same material, resistance and gauge in all cases.

A high resistance splice in one side of a line is certain to cause an unbalance that will upset the transposition system and prove detrimental to transmission. When line wires contact trees, it will usually cause low insulation and unbalance also. Missing insulators may even cause unbalances in wet weather.

• • •

Q. If ground rods are used to provide a ground for a small dial exchange, how should they be installed?

A. One authority recommends that at least five ground rods about ½ inch by 8 feet be driven into the ground their full length. These rods should be at least 8 feet apart.

Each rod is then soldered to a No. 6 copper wire that is extended to the exchange. This ground also should be connected to the pipes of the local water supply when one is available, in order that it may lower the resistance of the connection.

Maintenance Testing Equipment

By JOHN A. BRACKEN

THE OPERATING principle of another type of polar relay is shown in *Fig. 1*. A single winding in the form of a hollow coil is placed over the relay armature, sufficient clearance being provided to allow the armature to move freely in a horizontal plane within the coil. This armature is practically in a floating condition, and thus its movement is readily controlled by any changes in the adjacent magnetic polarity.

A steel horseshoe type permanent magnet is mounted around the lower part of the hollow coil with its ends at the front. Attached to the ends of the permanent magnet are soft iron adjustable pole pieces.

When current is not flowing through the relay coil, the magnetic field of

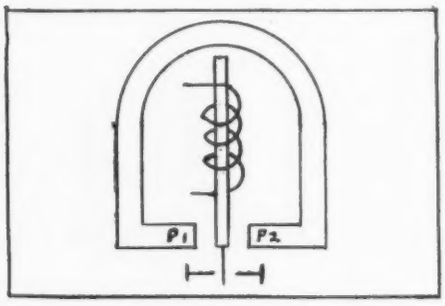


Fig. 1

the permanent magnet tends to hold the armature in a balanced position between the pole pieces, so that it may be deflected toward either pole piece.

Owing to the fact that unlike magnetic poles attract each other, it will be seen that when the direction of a current through the relay coil is such as to give the armature, by electromagnetic induction, the opposite polarity to either pole piece, P 1 or P 2, the armature will move toward the pole piece having a magnetic polarity opposite to that of the armature.

By means of the adjustable pole pieces, also right and left hand contact screws, the relay armature travel may be so limited that the relay magnetic polarizing force is just sufficiently in excess of the opposing magnetic forces of the armature to hold it against either contact screw if required.

When the relay operates under the influence of reversals of current through its coil, both the operating and polarizing magnetic fields reverse in direction through the armature, which causes this type of polar relay to be highly sensitive to very small currents.

PART 64. The preceding article in this series appeared in the Aug. 8 issue, page 36.

Self-polarizing is the term applied to the polar relay shown in *Fig. 2*. This relay is called self-polarizing because it is equipped with an additional electromagnet instead of a steel bar permanent magnet. The three electromagnets are connected in series, and the arrows indicate the direction of an electric current through the windings.

In this arrangement, the polarity of the electromagnet pole piece P 1 is north, while the polarity of the pole piece P 2 and P 3 is south.

The air gaps between the relay and the pole pieces P 1 and P 2 are variable, due to these pole pieces being adjustable.

The pivoted end of the soft iron armature A is inductively magnetized by pole piece P 3, and of similar polarity; consequently the armature will respond to the attraction of the pole piece P 1 and to the magnetic repulsion of pole piece P 2, provided

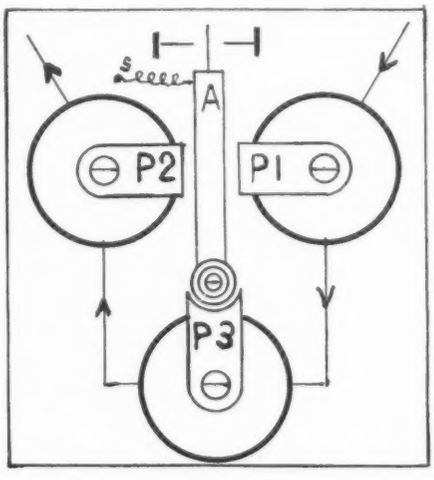


Fig. 2

the operating current be of sufficient value to overcome the pull of the retractile spring S attached to the armature.

When the relay operates under the influence of reversals of current direction through the three electromagnet windings, both the operating and armature-polarizing magnetic forces also reverse.

In general, the adjustable features of polar relays depend upon the particular type relay.

However, changes in the armature air gaps, magnetic pole piece gaps (which also change the strength of the polarized magnetic field), armature travel, and separation of the contact points, are the means used in conjunction with the electrical requirements for the proper adjustment of polar relays.

(To Be Continued)

V V

Arizona Independent Files Incorporation Articles

Articles of incorporation for the Parker Valley Telephone Co., Parker, Ariz., were recorded recently. The company will serve the Parker Valley. Parker itself is presently served by another Independent company.

Arthur C. Pederson of Parker is listed as president of the new company and E. Floyd Ross of Roosevelt, Utah, is the secretary-treasurer. Bennett E. Marks of Phoenix is listed as agent.

Stock capitalization has been set at one million dollars.

V V

To Sell Venezuelan Company

The Venezuelan government and the Caracas Telephone Co. have reached a tentative agreement providing for the transfer of the company's stock to the country, according to a report received by the Venezuelan Information Office from the former Minister of Communications, Col. Oscar Mazzei. The Caracas company is a subsidiary of Telephone Properties Ltd., London, England.

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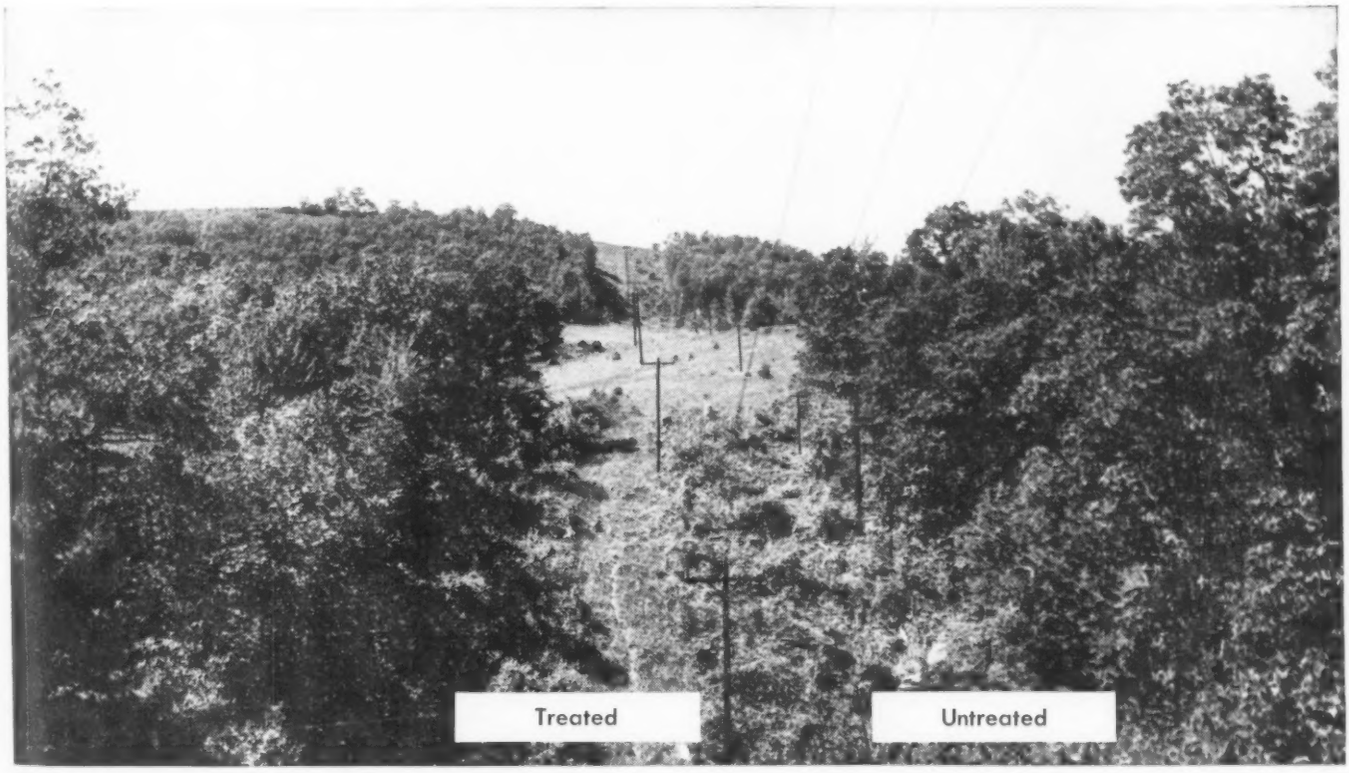

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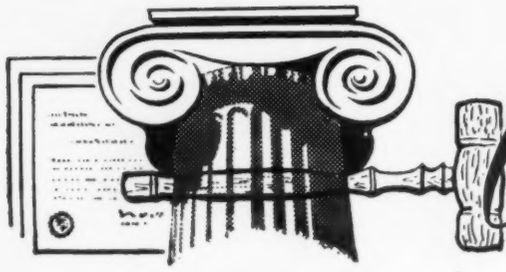


Courts and Commissions

Commission OK's $170,000 Loan For Nebraska Independent

The Consolidated Telephone Co., Dunning, was given permission by the Nebraska Railway Commission on Aug. 11, to obtain a loan of $170,000 from the Stromberg-Carlson Co., Rochester, N. Y.

The capital will be used to modernize plant, to convert to dial, and supply new facilities to meet demands for service which the company is now unable to fulfill.

The Consolidated company furnishes service at Dunning and seven other exchanges. All of them will be converted to dial.

V V

South Dakota Independent Granted Rate Increases

On Aug. 18 the South Dakota Public Utilities Commission granted the Hosmer Telephone Co. rate increases effective upon conversion to dial.

The new schedule of dial rates follows:

One-party business	$6.00
Two-party business	5.00
One-party residence	3.50
Two-party residence	3.25
Four-party residence	3.00

Mileage charges for each ⅛ mile beyond the base rate area:

One-party	.30
Two-party (each subscriber)	.20
Four-party (each subscriber)	.15

V V

Indiana Bell Ordered to Refund 5 Million Dollars

A refund of 5 million dollars to the 600,000 subscribers of Indiana Bell Telephone Co. was ordered by the Indiana Public Service Commission on Aug. 20 (TELEPHONY, Aug. 15, p. 31).

The commission's order was a modified version of one it put out on Aug. 6, when an 8 million-dollar refund was ordered. The earlier one was declared invalid by Judge Lloyd D. Claycombe in Marion County Circuit Court, shortly thereafter.

Like the commission's Aug. 6 order, the one of Aug. 20 reduces Bell rates by $1,700,000 yearly from the schedule the company has been charging under an order of Judge Claycombe.

The commission said the $1,700,000 figure was based on estimates given at hearings in the case, before the commission granted a small increase, which was appealed to Judge Claycombe.

Actually, commission members said, the 7 million-dollar rate increase granted by Judge Claycombe in 1951 is now yielding more than estimated at that time because of the increased number of telephones in service and other factors.

The commission estimated the actual difference between the rates Judge Claycombe ordered—and which Bell is now charging—and the rates ordered on Aug. 20 to be at least 4 million dollars a year.

The period covered by the new commission order is about 13½ months, from July 10, 1952, to the present, giving the approximate refund figure of 5 million dollars.

On Aug. 6 the commission ordered an 8 million-dollar refund covering the period from May 31, 1951, to the present. Judge Claycombe ruled this order invalid, and the Aug. 20 order omitted the period from May 31, 1951, to July 10, 1952.

Warren Buchanan, commission chairman, explained that the commission contends that the rates it ordered on July 10, 1952, should have been in effect since that time.

V V

Arkansas Independent Asks $25,000 Loan Approval

The DeQueen Telephone Co. asked the Arkansas Public Service Commission on Aug. 20 for authority to borrow $25,000 to help finance a planned expansion and improvement program (TELEPHONY, Aug. 1, p. 35).

The money would be borrowed from two banks on open notes at 5 per cent interest over a five-year period.

The DeQueen company recently reorganized under a commission-approved plan.

It serves DeQueen, Dierks, Horatio, Lockesburg and rural adjacent territory.

V V

Missouri Company Asks Sale OK

It was reported on Aug. 20 that North Side Telephone Co., Parkville, has filed an application with the Missouri Public Service Commission requesting authority to sell its property to Southwestern Bell Telephone Co. The North Side company serves 1,500 subscribers.

V V

Minnesota Independent Sells One Exchange

On Aug. 11 the Minnesota Railroad & Warehouse Commission authorized the Northland Telephone Exchange, Hill City, to sell and Kenneth Allain to buy the Northland company's property at Palisade.

Mr. Allain will operate the property under the name of the Palisade Telephone Exchange.

V V

Southern New England Gets $2,851,800-a-Year Rate Raise

The Southern New England Telephone Co. has been authorized by the Connecticut Public Utilities Commission to increase its rates by $2,851,800 a year. The company had asked for an advance of $3,935,000 in gross revenue (TELEPHONY, May 30, p. 22.)

Aug. 20 was named as the date on or after which the increase could be put into effect, and the company announced that effective Aug. 22 paystation minimum rates would rise from the previous nickel to a dime.

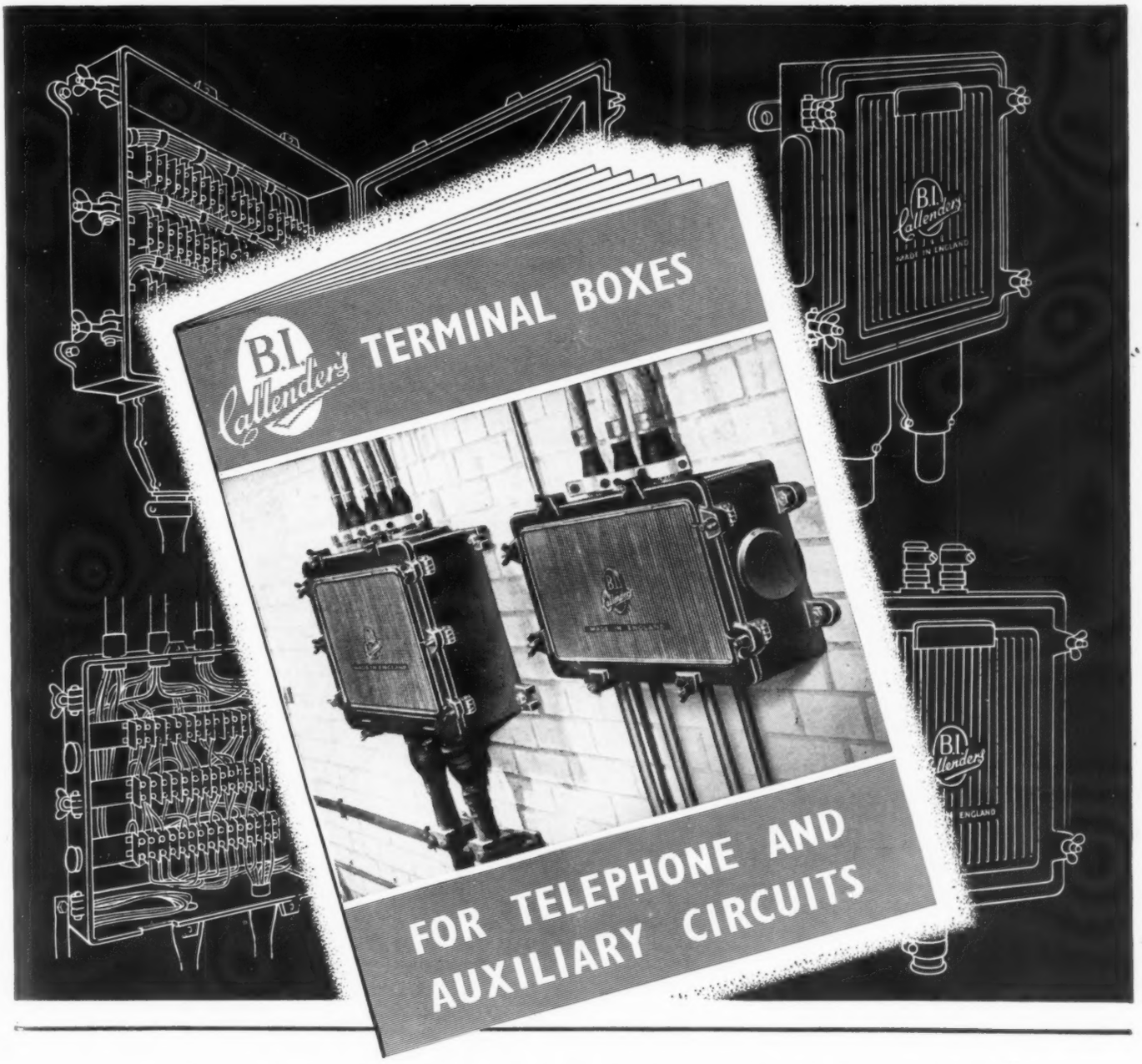
Five-cent increases on both person-to-person calls and on collect calls where the station rate is 25 cents or less were scheduled to become effective on Aug. 20.

The commission denied the company's request to raise the overtime charges on toll calls.

A new schedule was to be presented to the commission for its approval. This involved a slash of $1,084,000 in the proposed advance to $3,935,000, and, when approved, the company was authorized to put it into effect within four days after the commission's consent was obtained.

The commission justified its cut of almost 28 per cent of the increase asked by two major comments:

(1) By refusing the increase in overtime rates the commission said it was preventing loss of business to the com-



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pany which would not be made up by the advance. Stressing that the initial cost to the company is in making the connection, the decision said that encouragement, not discouragement of longer use of connections once made, would be of greater advantage to the company.

(2) Noting that the company plans to expend 65 million dollars in capital improvements in the next two years (one of the main reasons the rate advance was asked), once the full conversion is made to the dial system, capital expenditures will be greatly lessened and so will the need for additional revenue.

Commenting on the company's estimate that its business and revenue would show a decline in future years, the commission said that company witnesses were notably not specific in assigning reasons for such a decline.

The commission held that the company's pessimism appeared somewhat inconsistent with its ambitious program of expansion. Also, that it had not, in the commission's opinion, been completely verified by the company and testified to at the hearing.

Finally, the decision pointed out that the company's per share earnings of $2.17 in 1952 before an unusual transfer to the pension reserve represented higher earnings than in all but three years out of the past two decades.

The company serves all of Connecticut except Greenwich.

V V

Nebraska Independent Granted New Rates

The following are the rate increases granted the Ames Creek Telephone Co., Obert, by the Nebraska Railway Commission on Aug. 12, and effective Sept. 1 (TELEPHONY, Aug. 22, p. 46).

	Old	*New*
One-party business, metallic	$2.80	$3.30
One-party business, grounded	2.80	3.30
One-party residence, metallic	2.00	2.50
One-party residence, grounded	2.00	2.50
Rural, metallic	1.75	2.25
Rural, grounded	1.75	2.25

Rates are net as the company does not employ a prompt-payment discount plan.

Need for additional revenue to meet increased maintenance expense was the principal reason for the application. The company stated it was unable to keep a competent lineman and to properly maintain its plant and equipment under the former rate structure.

Estimated additional gross revenue under the new rates will be $534 a year. The company proposes to increase its maintenance expense $500 a year. According to the commission's analysis, the new rates will result in an annual net profit of $326.30.

The company furnishes service over both metallic and grounded lines to 89 subscribers at Obert. It is a corporation with an authorized maximum capitalization of $5,000 and has 77 shares of capital stock outstanding at a par value of $50 per share.

V V

Carolina T&T Plans Stock Issue To Repay Short Term Debt

The Carolina Telephone & Telegraph Co., Tarboro, N. C., plans to repay some short term debt by selling 33,320 shares ($3,332,000) of its $100 par common stock to its shareholders, according to a registration statement filed with the Securities & Exchange Commission.

The company will offer the shares in the ratio of one new share for each five held on Sept. 16. No underwriting is involved.

V V

Minnesota Commission Grants Increases to Two Companies

The Minnesota Railroad & Warehouse Commission approved rate increases on Aug. 11 for the Winsted Telephone Co. and on Aug. 14 for the Home Telephone Co., Grand Meadow.

The Winsted company was granted interim rate increases to produce operating revenues of $20,723, as against original revenues of $16,554; net income of $3,904, up from $2,687, and a net return of 5.68 per cent on a plant original cost of $68,700. After proposed additions to plant have been made, a higher rate schedule would apply that would produce operating revenues of $22,100, a net income of $4,695, and a 5.64 per cent return on a plant original cost of $83,200.

The following are the two approved rate schedules:

	Interim	*After Additions*
Business		
One-party	$5.50	$5.75
Two-party	4.50	4.75
Rural multi-party	4.00	4.25
Residence		
One-party	4.00	4.25
Four-party, full selective	3.25	3.50
Four-party, semi-selective	2.75	3.00
Rural multi-party	3.25	3.50

The Winsted company serves approximately 281 local and 101 rural subscribers.

The Home company's increased rates, applicable upon conversion to dial operation, would raise operating revenues from a present $22,843 to $27,276, and net income from $342 to $7,069. On an original cost of plant after conversion to dial of $137,000, this would be a 5.16 per cent return.

The following is the schedule of approved dial gross rates (discounts allowed for prompt payment):

Business	
One-party	$5.25
Two-party	4.50
Rural multi-party	4.25
Combined business and residence (one-cable pair)	7.50
Residence	
One-party	3.75
Two-party	3.25
Four-party	2.50
Rural multi-party, metallic	3.50

The Home company serves approximately 273 local and 290 rural subscribers.

V V

Citizens Company of Kentucky Granted Limited Rate Raise

The Kentucky Public Service Commission recently granted rate increases to the Citizens Telephone Co., Covington (TELEPHONY, May 2, p. 26).

Lively M. Wilson, commission secretary, said the commission turned down the request of the company for increased toll rates and for paystation calls.

Under the commission's order, one-party business rates are increased from $14 to $18; one-party residence from $5.25 to $6.00, and two-party residence from $4.00 to $4.75.

The increases will amount to approximately $679,310 a year for the company. The Citizens company, in its application filed last September, sought an increase in revenue of $870,000 a year.

The company said it was asking for the increase to cover increased cost of labor and operating expenses.

V V

Middle States $39,000 Increase Effective With Improvements

The Missouri Public Commission recently granted Middle States Utilities Co. of Missouri, Cameron, the right to increase rates by $39,000 a year but ordered improvements in service first (TELEPHONY, Jan. 17, p. 28).

V V

Ill. Company Asks Rate Raise

It was reported on Aug. 18 that the Mt. Pulaski Telephone & Electric Co. has filed application with the Illinois Commerce Commission for a rate increase at its Mount Pulaski, Chestnut and Latham exchanges.

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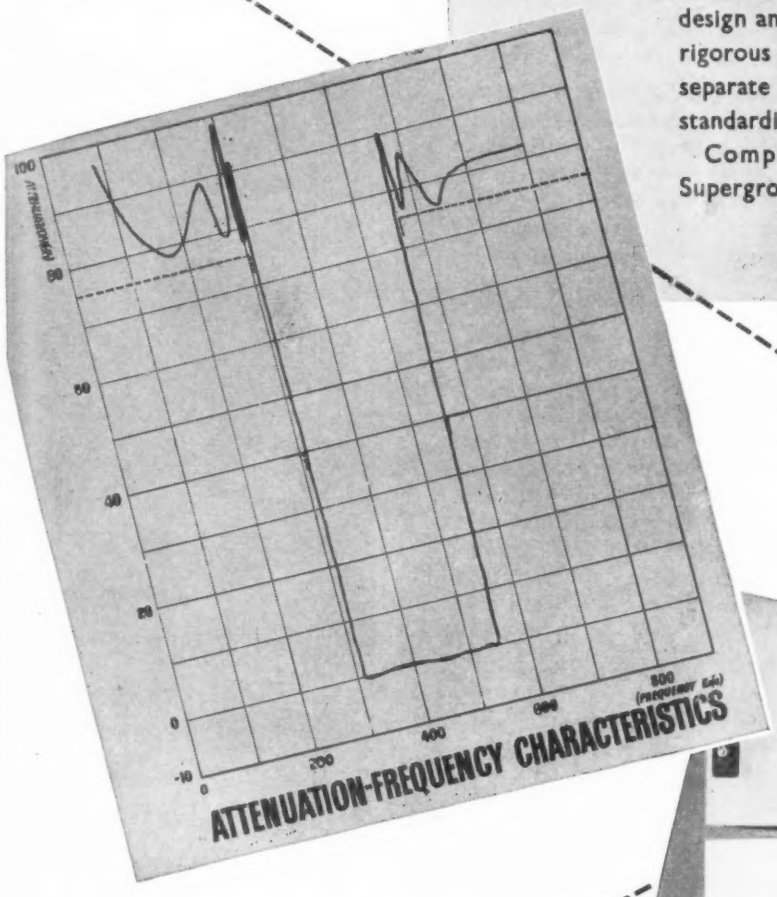

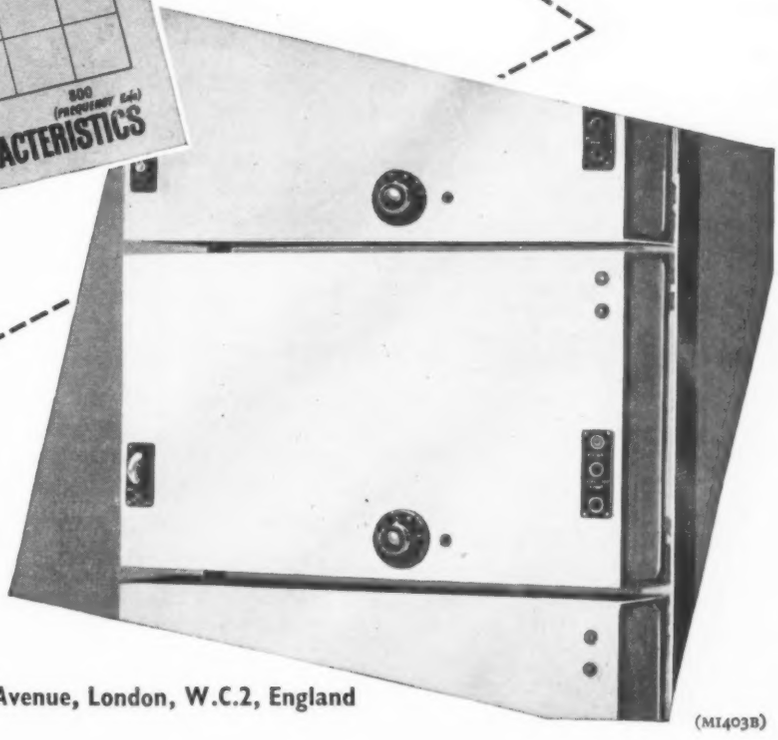

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Communications Protect Miami

Emergency Reporting

(Continued from page 26)

patching of the correct amount of equipment.

If the emergency station is used for a call other than that of reporting a

C. J. TUCKER JR.

fire, the switchboard attendant can easily transfer the call over tie lines to the police or other proper department.

V V

Strong Named Acting Deputy REA Administrator

Fred H. Strong has been named acting deputy administrator of REA, succeeding William Wise who resigned recently.

Mr. Strong at one time was assistant to REA Administrator Ancher Nelsen when Nelsen was lieutenant governor of Minnesota. Mr. Strong is also a former St. Paul newspaperman.

V V

Capital Securities Issue OK'd For General of Ohio

General Telephone Co. of Ohio, Marion, received approval from the Ohio Public Utilities Commission recently to issue $4,419,540 in capital securities.

The company, a subsidiary of the General Telephone System, will use the money to reimburse its treasury for 1952 expenditures.

In the midst of an improvement program now, General of Ohio will determine the exact nature of the securities at a later date.

Two-Way Radio Network

(Concluded from page 27)

era in city management. On Dec. 5, 1935, a communications bureau was established within the police department and was the first police communications system officially operated by the City of Miami. The new bureau, inaugurated with the approval of the city commission at the recommendation of the director of public safety, then Andrew J. Cavanaugh, had appointed as its chief operator in charge of administrative and technical duties one Ben C. Demby, a young traffic patrolman. From this point on, the story of communications in the City of Miami might well be the story of Ben Demby.

Though consisting of only 12 mobile units, the new communications bureau handled approximately 14,000 calls during its first year of operation. The new bureau was to accomplish an analytical study of the operations and needs, including equipment complement, which would lead to a mature city radio system. With handmade equipment, the first transmissions of the newly created bureau were omitted on Jan. 5, 1936. Through tedious experiments, under the direction of the chief of the bureau, continuing two-way mobile tests were conducted for the mayor, city commissioners, city manager-director of public safety and chief of police. By October, 1936, the test phase had proceeded to the point where city management felt justified in authorizing expansion of the bureau.

By this time, units of the fire department had been equipped which gave the Miami Fire Department the distinction of being the first metropolitan fire department in the United States to be fully equipped with two-way radio. Today, 471 firemen are organized in 22 combat companies including nine engine companies, six truck companies, four chemical companies, two hose companies and a rescue squad. All fire apparatus is radio equipped. According to Fire Chief Henry Chase, "Time is the most precious element in fire fighting efficiency far beyond the dollars which good communications cost."

Upon completion of installation of mobile two-way radio units in the police and fire department within the City of Miami, the resultant increase in efficiency demonstrated by both departments encouraged the use of two-

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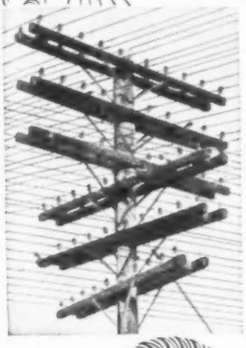

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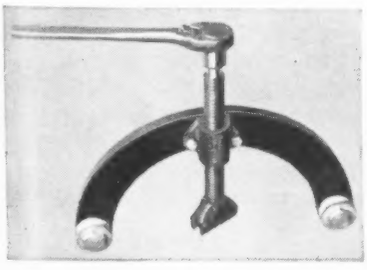

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way radio to extend throughout the Dade County civil operations including the sheriff's department and other surrounding municipal law enforcement agencies. Early 1944 saw another first added to the record of the Miami Police Department with two-way radio installations successfully installed to coordinate and dispatch solo motorcycle units for the first time in any metropolitan service in the United States.

By March, 1944, the reputation of the Police Communications Bureau headed by Ben Demby, had matured to the point where the city commission appointed a third and separate division to its department of public safety to be known as the Communication Division with its supervisor appointed to hold the rank of superintendent. Ben Demby naturally fell heir to this assignment. By this time, the operation was big. The responsibilities were sizable and the planning had taken on an even greater aggressive and progressive attitude. Ben Demby had proved his point—two-way radio was an essential element of public safety administration, law enforcement and fire protection. The activity had outgrown its shops; its plans took on the need for a formal engineering approach. The system had grown beyond the level of basic planning and had gotten into the area which was now inherently technical and demanded more academic support. The basic communication plan was mature—the organizational problems and growing pains had been solved. Now the problems were technological. There were interference problems attendant to the use of the low frequency bands heretofore allocated for public safety usage by the Federal Communications Commission. There were skip problems with police departments all the way across the country receiving Miami calls and vice versa. There were noise problems with manmade noises interfering seriously with emergency communications.

It was at this time that Mr. Demby, in collaboration with Motorola Inc., looked toward the 150 mc frequency band as the possible solution to the interference problem. Lengthy tests were conducted in the City of Miami under the supervision of Mr. Demby, using new equipment developed by Motorola's Communications and Electronics Division. Though many leading engineers of the country took a dim view of effective mobile operations in the frequency range above 100 mc, the Miami tests proved successful and in 1944 the City of Miami was granted the first license in the United States authorizing the installation and operation of mobile radio equipment above 100 mc.

"OH, ALL RIGHT, I'LL HAVE THEM MAKE THE CORD LONG ENOUGH TO REACH THE CHAIR."

At the present time, the City of Miami operates more than 350 mobile units in the 152-162 mc band using six frequencies to cover the entire Dade County area in coordinating its city operations plus a number of municipalities throughout the county servicing the Dade County sheriff's office, road patrol, Dade County police and other governmental agencies.

In 1948, tabulation of transmissions was initiated. During that year, 1,074,000 radio calls were completed. Traffic has mounted steadily. This year, 1953, an estimated 3,500,000 calls will be transmitted over the Miami radio system. This averages over six calls per minute or approximately nine seconds per transmission. Mr. Demby attributes much of this remarkable performance and efficiency to his staff of female dispatchers. The girls seem to stand the pace much better than a man. Long hours of heavy but routine traffic are not palatable to the male dispatcher. To maximize efficiency and job interest, and to minimize fatigue and trained personnel shortages, the girls work rotating shifts in the communications center serving as radio dispatchers, teletype, IBM, and switchboard operators.

The dispatchers have close supervision at all times with their work carefully systematized. In police work for example, the complaint sergeant receives all calls directly. The call to be radio dispatched is recorded on a log card together with complete instructions and moved into the dispatcher by conveyor belt. The officer retains full control without having the burden of routine dispatching. The performance record is proof of the efficiency of such a procedure.

Over a year ago, Miami launched the latest of its many innovations in public safety radio, the first municipal 450 mc system. To relieve congestion in the 160 mc range, Miami, with assistance from engineers of Motorola Inc., conducted mobile two-way radio

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tests employing 450 mc equipment. The survey proved the feasibility of municipal two-way radio operating in this practically unoccupied band.

For some time now, a highly successful point-to-point 450 mc radio control circuit has been in and operating between Miami and Homestead, Fla., 30 miles away. Continued tests have been so favorable that a broad program of complete change-over of the city police from 160 mc to the new 450 mc equipment is already under way.

Long a pacemaker in the field of public safety radio, Miami continues to be progressive. Radio instruction is included in the curriculums of the Police Academy and Fire School. Operating procedures, code alphabets and radio technique are instilled in the recruit so that he may efficiently use one of the most important tools he will have to work with. Radio is indeed a prime element of metropolitan public safety management as exemplified by the City of Miami, Division of Communications.

V V

"There is a greater demand for executive ability today than there are people to fill the executive jobs."—JOHN H. DEMPSTER, *president, American Savings & Loan Institute.*

Appraisal of Rate-Making Trends

(Continued from page 19)

and due process no matter how expert our commissions may claim to be. And on the whole, that strikes me as the safest course to follow, for regulation generally.

We do not know what the future has in store in the way of continued inflation or price fluctuations. It is quite conceivable that a formula that would be valid and desirable in one period would be undesirable and unworkable in another. Just the other day I read of a Georgia commission decision[16] in which the commission used as a rate base invested capital instead of the investment in plant and equipment. The commission gave as its reason the fact that an invested capital base eliminates the troublesome question of construction work in progress which would have to be decided if plant investment were used as a base. Now, in theory that is exactly what the court found wrong with the railroad company's argument in Smyth *v.* Ames. But it is conceivable that back in 1898, before regulation of security issues could get the water out of the utility stocks, there were sound objections to invested capital as a rate base, which would not be sound or valid at this late date.

[16] *Re* Georgia Power & Light Co., Docket No 470-U, decided May 11, 1953.

No Exclusive Test

Again, it is conceivable that a continued inflation would make a strict original cost base for rate making entirely unworkable. At our convention in San Francisco last year, one of the speakers referred to the experience of a telephone company in Shanghai, China, operating under such monetary conditions that the original cost of the entire utility plant would not buy a single telephone instrument.

Who can say then, in the coming years in this country, the dollar will not fall in purchasing power to such an extent as to make the use of an original cost rate base not only unjust and unworkable but positively ridiculous! It is no answer to say that prices go down as well as up. In the last 60 years the purchasing power of the dollar has dropped to less than a third, and in only about a half-dozen years has it gone up instead of down. This

This new issue of Common Stock is being sold to the general public by a number of investment bankers, including the undersigned. The offering is made only by means of the official Prospectus.

300,000 Shares

General Telephone Corporation

Common Stock *(Par Value $20 Per Share)*

Price $39.50 per Share

You are invited to ask for a Prospectus describing these shares and the Company's business. Any of the firms listed below which are qualified to do business in this state will be glad to give you a copy.

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Mitchum, Tully & Co. — Stone & Webster Securities Corporation

Blyth & Co., Inc. — Kidder, Peabody & Co. — Hemphill, Noyes & Co.

Hornblower & Weeks — W. C. Langley & Co. — Merrill Lynch, Pierce, Fenner & Beane

White, Weld & Co. — Dean Witter & Co. — Robert W. Baird & Co., Incorporated

Central Republic Company (Incorporated) — Lee Higginson Corporation — Laurence M. Marks & Co.

F. S. Moseley & Co. — The Ohio Company — Shields & Company

August 19, 1953

means that over any long-range period the use of a strictly original cost rate base is simply a device for shortchanging the original cost investors.

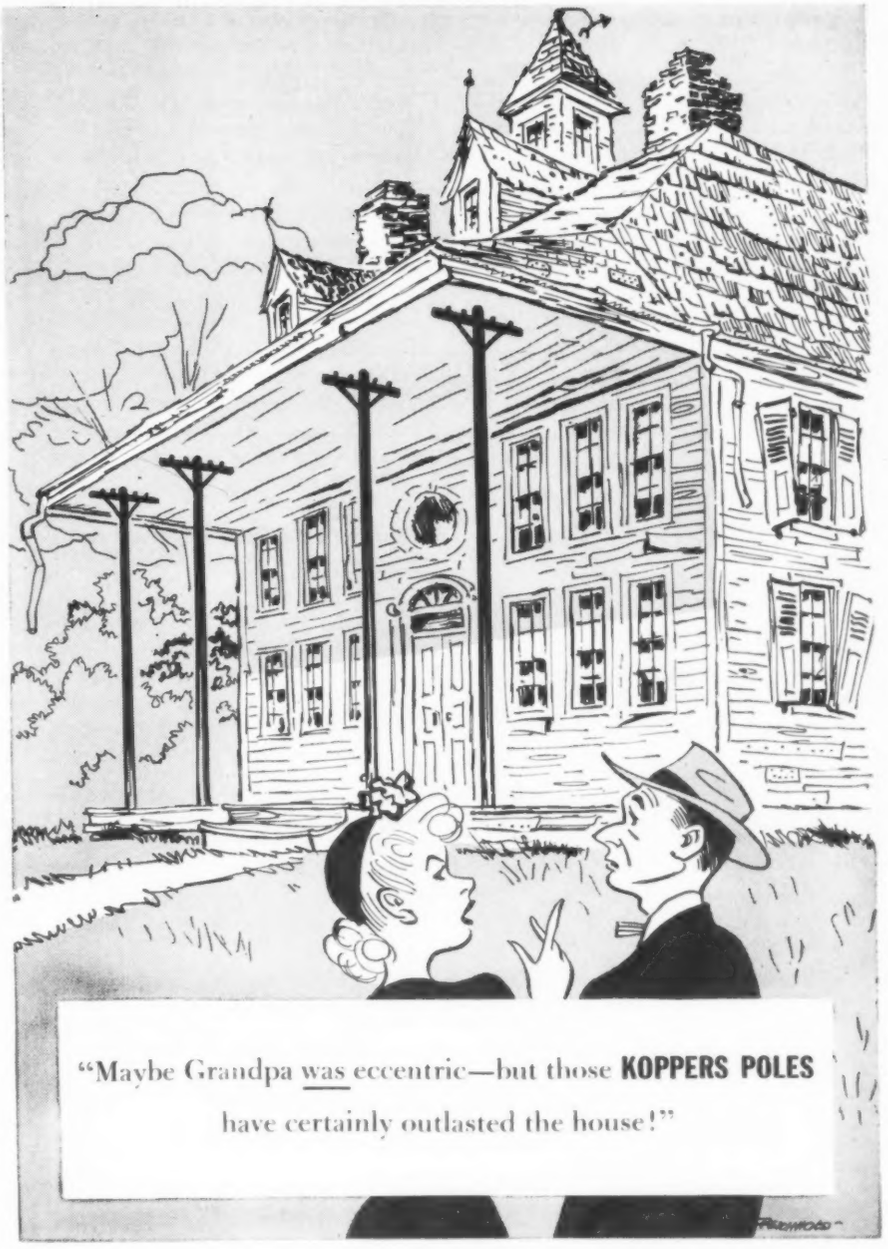
The point I am making is the point which, it seems to me, the U. S. Supreme Court made in Smyth *v.* Ames: That no one formula or consideration should be the exclusive test. All of these formulas are instruments which might be valuable and workable under changing conditions. As practitioners and students of regulation, it seems to me to be important that we should keep these instruments in working order, against the time when they may be needed. Fortunately the courts have not forbidden this choice of instrument, although we have come very near to that in some of the closely divided decisions. And because the door *has* been left open, it is not necessary for us to go to Congress at some future date with the difficult task of rewriting regulatory laws in order to get around some restrictive decisions, as is the case with some other phases of regulation; notably, FPC jurisdictional questions under the Natural Gas Act.

It is a tribute to the wisdom of our system of checks and balances that the courts continue to resist pressure of passing passion and prejudice, which might result in unwise restrictions over the long range. In short, as I see it the "ghost of Smyth *v.* Ames" is still doing business at the same old stand. It may not be doing as much business as it used to do under the Fourteenth Amendment, but the courts, as a whole, are still keeping the door open to those who need protection from any real abuse by administrative experts. Who can say but that with changing times, continued inflation, and turnover in membership, even some experts on our federal commissions may not change their minds about the wisdom of the fair value rule?

The Federal Power Commission had two new members appointed during the past year and another's term is expiring next June. Who can say that—with continued inflation—FPC may not some day decide that it will have to go back to fair value rule? When and if it does, the door is still open under the majority decisions of the highest court. And those who think that the "ghost of Smyth *v.* Ames has been permanently laid" are, in my humble opinion, indulging in pipeline dreams of wishful thinking, or should I say expressions of "hope"?

V V

It has been said that if you are not afraid to face the music you may some day lead the band.



● Grandpa was pretty smart, after all. He *knew* that creosoted wood far outlasts ordinary wood.

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KOPPERS PRESSURE-CREOSOTED WOOD

General Corp. Offers 300,000 Common Shares to Public

It was reported on Aug. 19 that public offering is being made of 300,000 shares of $20 par value common stock of General Telephone Corp. at $39.50 a share.

Paine, Webber, Jackson & Curtis; Mitchum, Tully & Co., and Stone & Webster Securities Corp. jointly head the underwriting group.

Proceeds will be used to pay part of the cost of new construction by subsidiary companies which operate 1099 exchanges in 19 states and have 1,599,618 company-owned telephones.

Included in the underwriting syndicate are: Merrill Lynch, Pierce, Fenner & Beane; E. D. Jones & Co.; Stix & Co.; McCourtney-Breckenridge & Co., and Central Republic Co.

V V

Peninsular Expands 100% In Less Than 6 Years

Installation of the 200,000th telephone on Florida's central west coast marks a station growth in the past six years equal that of the preceding 46. Carl D. Brorein, president of the Peninsular Telephone Co., Tampa, serving the six-county area, reports it this way:

It took Peninsular 46 years to install 100,000 telephones, but it added another 100,000 in less than six.

Mr. Brorein said that the company's 100 per cent growth in less than six years has been "extraordinary," and about double the percentage gain for the country as a whole.

Since the end of World War II, the value of the Peninsular plant, buildings, equipment, and outside facilities, has grown by 30 million dollars, from 15 million to 45 million dollars. "This 200 per cent increase in investment required to accomplish a 100 per cent growth is a result of inflation," Mr. Brorein said.

V V

Company Issues Booklet on Restoration After Fire

The Mount Vernon (O.) Telephone Co., scene on May 22 of a ruinous fire, has issued a booklet covering the story of the disaster and the prompt service restoration, plus a brief history of the company and pictures of executives and supervisory personnel (TELEPHONY, June 13, p. 43).

On the back cover are printed copies of the vote of thanks and congratulations by the Mount Vernon Chamber of Commerce on the "speedy job of restoring telephone service"; and a copy of a letter from the Ohio Public Utilities Commission voicing similar commendation (TELEPHONY, July 18, p. 34).

The company is presently seeking a rate increase (TELEPHONY, Aug. 22, p. 46).

V V

Illinois, New York TV Stations Linked to Bell Network

The Long Lines Department of the American Telephone & Telegraph Co. has announced that WEEK-TV, Peoria, Ill., and WBUF-TV, Buffalo, N. Y., began receiving network television service on Aug. 15 and 17 respectively, when they were joined to the Bell Telephone System's nationwide network facilities.

The WEEK-TV connection was made possible, Long Lines said, with the opening of a 137-mile section of a new radio-relay system being constructed between Chicago and St. Louis. The route's remaining 147 miles are scheduled for completion in September. The full route will provide Peoria with telephone message, as well as TV service.

The WBUF-TV connection was made to intercity facilities bringing programs from New York City via Albany. At Buffalo, TV signals are beamed from the telephone building to the station over a new microwave link built by the New York Telephone Co.

With the addition of these two video stations, network programs are now available to 150 stations in 99 cities in the United States.

V V

Report Sale of Two Exchanges In Oklahoma

The following two sales of telephone properties have recently been reported in Oklahoma:

A. W. Martin, a Texas telephone man, has purchased and taken over operation of the Elgin (Okla.) Telephone Co.

* * *

Carrol Cook, owner of the Fletcher (Okla.) Telephone Co., has purchased and taken over operation of the Cyril Telephone Co. exchange at Verden, Okla.

Mr. Cook is a well-known Independent telephone man in the state, having owned several other exchanges.

V V

A. F. Brooks on Advisory Board

Allerton F. Brooks, president, Southern New England Telephone Co., is one of 20 prominent business leaders who have been named as members of the Business & Industry Advisory Commit-

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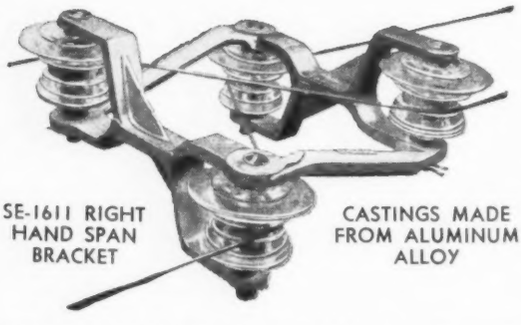

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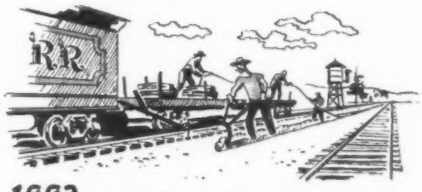
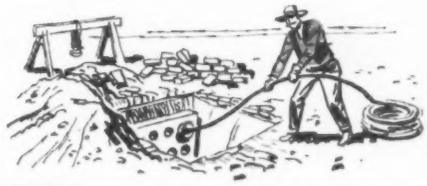
The story of underground installations—

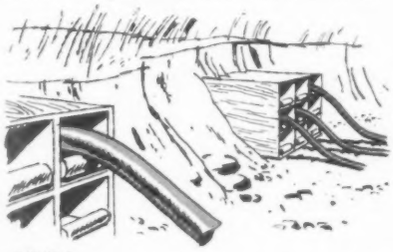
1881 — **Pittsburgh, Pa.** 3" overhead-type Patterson cables were laid in a wooden box and covered with pitch. (Cables consisted of 50 cotton-insulated #26 copper wires in a paraffine-filled lead sheath.)



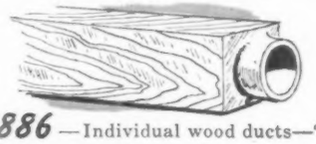
1882 — **Attleboro, Mass.** A locomotive-drawn plow was used to lay 5 miles of ¾" lead pipe containing the first *gutta-percha*-insulated cable (21 wires) — between Attleboro and West Mansfield.



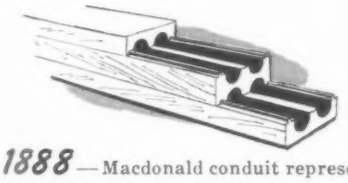
1882 — **Boston, Mass.** The first "drawing in" duct system was constructed of 18' wrought iron boiler tubes pretreated with gas tar and dead oil.



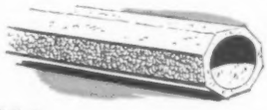
1884 — **Brooklyn, N. Y.** A creosoted wood "drawing in" system was installed. Built of 1½" lumber in 16' sections, it featured rollers to reduce cable-pulling friction.



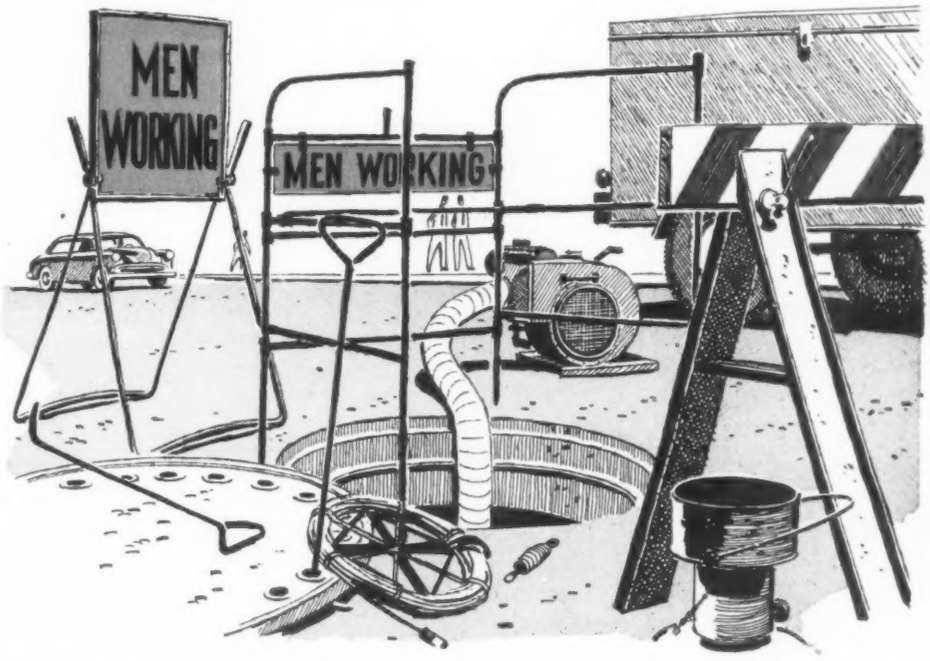
1886 — Individual wood ducts—"Pump Logs"—were developed.



1888 — Macdonald conduit represented the ultimate in wooden duct systems.



1890 — The first vitrified clay conduit was used.



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tee of The New England Colleges Fund, according to an announcement made on Aug. 27 by James Phinney Baxter III, president of the Fund, and president of Williams College, Williamstown, Mass.

V V

W. J. Hamm Named Vice President Of Union Company of Michigan

William J. Hamm has been named to succeed J. F. Van de Vusse as vice president and general manager of the Union Telephone Co., Owosso, Mich. (TELEPHONY, Aug. 22, p. 56).

Mr. Hamm has been associated for seven years with the Gary organization, with headquarters in Chicago. After his discharge from the Army in 1946 as a major in the U. S. Army Signal Corps, he entered the Independent telephone industry with the Gary organization in the capacity of executive assistant to the chief executive. Subsequently, he became assistant general manager, and later, general manager of a group of 11 Gary companies, in many of which he held corporate positions.

Born and raised in New York City, he received a B.S. degree in Electrical Engineering and Master's in Business Administration from New York University. For 14 years he was with the New York Telephone Co. in the commercial, sales and engineering departments.

W. J. HAMM

In 1942 he was commissioned in the Signal Corps and spent a short time at Fort Monmouth, N. J., before being assigned to the War Plans Branch in the Office of the Chief Signal Officer in Washington. Later, overseas, he became chief of the personnel and training section of the Office of the Chief Signal Officer for the Western Pacific Theater. As commanding officer of the 4025th Signal Service Group, he served in the Philippines, Okinawa and Japan.

V V

A. L. Stott, J. L. Scanlon Promoted by AT&T

Alexander L. Stott, treasurer of the American Telephone & Telegraph Co., was elected comptroller of the company on Aug. 19.

He succeeded William Shelmerdine, who retired after more than 46 years of service with the Bell Telephone System.

John J. Scanlon, assistant treasurer, was elected treasurer succeeding Mr. Stott. The changes are effective Sept. 1.

AT&T's new comptroller and treasurer both rose from the ranks. Mr. Stott started with the company as a clerk in 1929, and Mr. Scanlon began work with the Bell Telephone Co. of Pennsylvania in Philadelphia in 1925, as a messenger boy.

V V

S. W. Ratajack New General of Michigan Plant Superintendent

General Telephone Co. of Michigan has appointed Stanley W. Ratajack to the position of general plant superintendent, succeeding F. W. Hamper, who recently was named personnel director for General Telephone Co. of the Southwest, Dallas, Tex. (TELEPHONY, Aug. 22, p. 56.)

Mr. Ratajack is a veteran of 29 years experience in telephone communications. He began his career in 1924 as a lineman with the New York Telephone Co., and for nine years held various positions with that organization.

In 1933 he was employed by a private electrical contractor as an installer of PABX equipment, and in 1937 took a position with the telephone department of New York City's Board of Transportation.

During World War II Mr. Ratajack served with the communications engineering section of the Air Service Command, and in 1946 joined the General company of Michigan as state construction supervisor. Earlier this year he was appointed maintenance methods and results supervisor.

V V

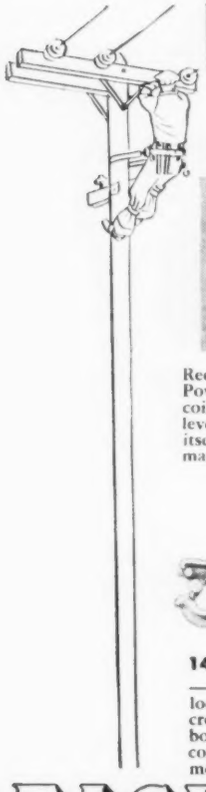
OBITUARIES

CHARLES W. DRAPER, owner of the Calumet (Okla.) Telephone Co., died recently, it has been reported.

He was about 67 years old and was one of the oldest Independent telephone company owners and operators in the state. Mrs. Draper is continuing as owner and operator at Calumet.

* * *

WILLIAM GOINS, 49, owner of the



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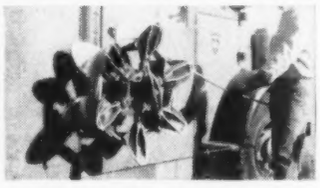

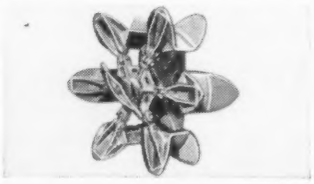

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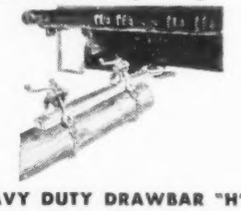

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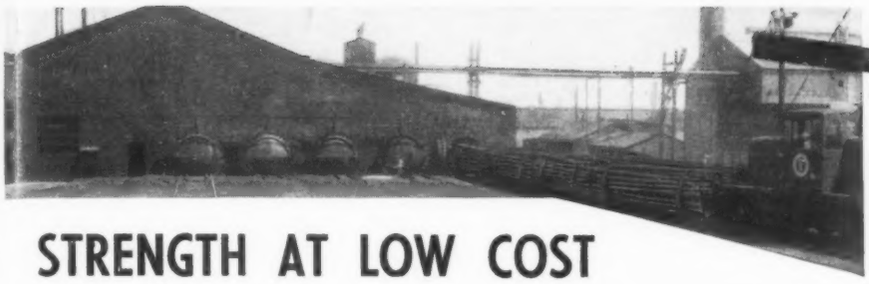

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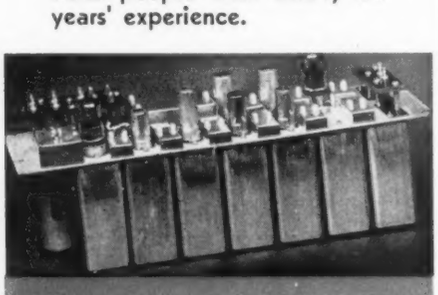

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Mutual Telephone Exchange, Seligman, Mo., died at his home on Aug. 17.

Mr. Goins had been in ill health for several years, and in recent months had taken a less active part in the operation of the company.

V V

General of Indiana Makes 120,000th Installation

General Telephone Co. of Indiana, Lafayette, installed its 120,000th telephone in July.

The installation made in Wabash, one of the company's 67 exchanges, marked the doubling of its company-owned stations in the past 10 years.

H. E. Hussey, General's president, speaking of the company's large scale expansion program said:

"During the past 10 years our total investment in telephone facilities has more than tripled, growing from 8.5 million to 26.5 million dollars. Most of these additional funds came from the sale of company stocks and bonds.

"Of particular significance is the expansion of General's rural plant facilities and its dial conversion program. The company continues to serve an increasing number of rural subscribers. Over 25 per cent of the company's total main stations today are classified as rural telephones.

"In 1943 only 17 per cent were classified as rural. Today over 60 per cent of the company's total stations are dial-operated as compared to 43 per cent in 1943. In the past 10 years the company has converted 14 of its exchanges to dial operation and has established three dial offices."

The company has nearly 6,000 applicants for service in areas where telephone facilities are not available. In addition the company has several thousand requests for upgrading service to single party lines which it is unable to provide," said Mr. Hussey.

V V

BOOK REVIEW

"METHODS OF CALCULATING TRUNKING AND SWITCH QUANTIES," by Imre Molnar, Ph.D., 56 pages. Automatic Electric Co., Bulletin 485, July, 1953.

This new book, written and compiled by a recognized authority on telephone traffic theory and practice, brings together for the first time in a single work all information needed for the traffic engineering of step-by-step and other similar automatic switching systems, including fundamental considerations, practical procedures, and comprehensive tabular material.

In addition to the methods and tables which have long been used by Automatic Electric Co. and its affiliates in the engineering of Strowger step-by-step equipment, the book con-

REA APPROVES LOAN TO KANSAS COMPANY

The Rural Electrification Administration approved one rural telephone loan during the week of August 10 to 14. (Also, on Aug. 14, at the request of the borrower, REA rescinded a loan of $415,000, approved in June, 1952, to the Franklin Farmers Cooperative Telephone Co., Farmington, Me.)

Details of the approved loan follow:

W.E.G. Dial Telephone, Inc. (formerly Johnson County Telephone Co.), Gardner, Kan., $68,000, second loan to this borrower. Approved on Aug. 14.

These loan funds will be used for additional facilities to furnish modern service to 189 subscribers not included in the first loan of $400,000 approved in December, 1951.

With both REA loans, the borrower plans to construct 58 miles of new line, and rebuild 174 miles of the existing line. Dial central offices for the improved system will be located at Gardner, Wellsville and Edgerton. The improved and expanded facilities will enable the borrower to provide modern telephone service to 1,588 subscribers including 387 now without telephones.

The borrower is expecting to install new dial central office equipment in all three offices during August and September, and to complete construction of outside plant facilities, covered by the original loan, late in 1953. At that time W.E.G. Dial Telephone will be able to furnish modern service to the 1,400 subscribers who were included under the first loan. Service without toll charge is contemplated among all three of the exchange areas.

The completed system will operate over 295 miles of line in Douglas, Franklin, Miami and Johnson counties.

tains a large volume of material which has not heretofore been available, such as director capacity tables, recommended traffic observation methods and schedules, and recommendations for preparing basic traffic forecasts.

A feature especially useful to the traffic engineer is the large number of examples of application of the tables in translating basic traffic data into terms of switch and trunk quantities.

The traffic capacity tables have been revised to conform with the latest theoretic investigations, and to take into consideration the latest procedures of the Bell System, the British Post Office, and other major telephone administrations.

In all tables, traffic quantities are given in both unit calls (CCS) and traffic units (erlangs).

Of interest also, both to the beginner and to the experienced traffic engineer, is a comprehensive discussion in non-mathematical language of fundamental traffic factors and their significance in the working out of practical switch and trunk computation procedures.

The book has been prepared primarily for use by Automatic Electric Co.'s engineers and customers both in the United States and abroad, but it is understood that a limited number of copies are available without charge to others interested in this field of study.

Requests should be addressed to Automatic Electric Sales Corp., 1033 W. Van Buren St., Chicago 7, Ill.

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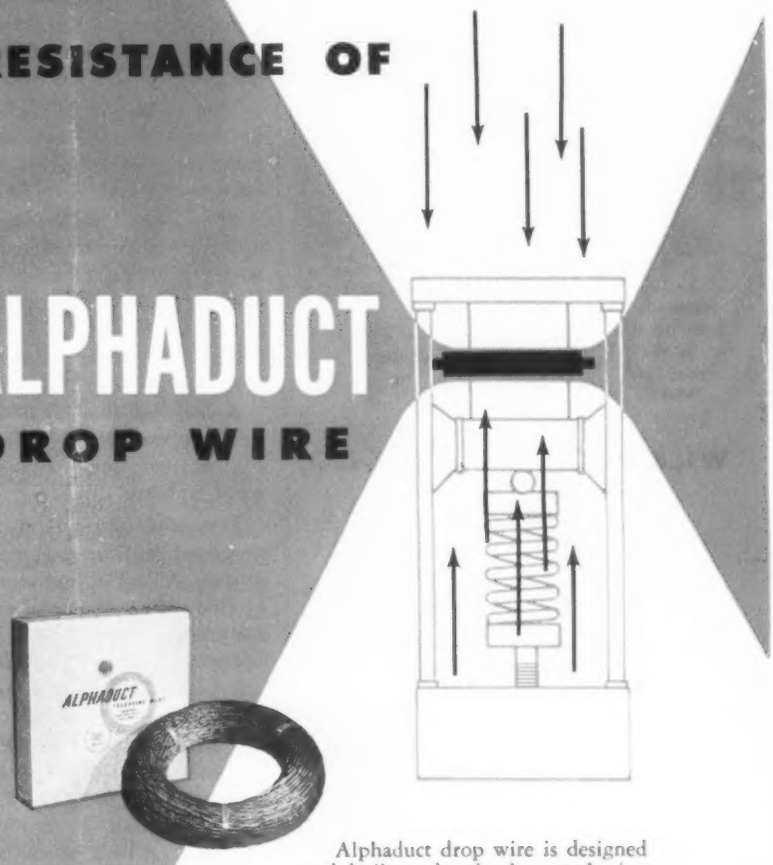

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AT&T Plans Record Financing For Future Construction

THE LARGEST private financing operation in history, an issue of up to 625 million dollars in convertible debentures, is planned by American Telephone & Telegraph Co.

The funds will be used to continue construction of facilities to meet unabated demands for telephone service by Bell System telephone companies.

The AT&T board of directors voted on Aug. 19 to recommend to stockholders that they authorize the new issue at special meeting Oct. 14.

It would bring to nearly 6¼ billion dollars the funds raised by AT&T and its subsidiary telephone companies for the vast expansion program that has added 18½ million telephones to the Bell System since the end of World War II.

AT&T said half a million persons still are waiting for telephones. About 1¼ million customers on party lines want private lines.

The new issue, if it approaches the proposed authorized maximum, would eclipse AT&T's last convertible issue, in July, 1952, that exceeded 498 million dollars and set a record high in private financing.

Proxy material for the special meeting is being registered with the Securities & Exchange Commission and will be mailed to stockholders about Sept. 5. Approval by holders of two-thirds of the more than 35 million outstanding shares of AT&T stock is required, but previous issues have been approved by overwhelming margins.

The proposal by the directors did not fix the price at which the debentures could be converted to common stock, but it is expected, as with previous issues, to be below current market price.

The AT&T has issued approximately 2 billion dollars of convertible debentures since 1946, of which all but 250 million have been converted into common stock.

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V V

Churchill Company Celebrates 50th Year in Telephone Field

On Aug. 4, 1904, a young man, Ole Gullicksen, fulfilled an ambition, developed early in life, by taking out papers of incorporation and founding the Churchill Cabinet Co.

The heartaches and setbacks were numerous to young Gullicksen, but in the first year of operation a friend of

O. GULLICKSEN

long standing gave him an order for 5,000 telephone bell boxes. The friend was Harmon Harris of the Automatic Electric Co.

During the many intervening years, the Churchill Cabinet Co. has made many items of wood for the telephone industry.

Today the company is making indoor telephone booths and recently it announced the addition of an outdoor booth to its line. It is still making wall and bell boxes, switchboard cabinets, intercommunication cabinets and directory stands.

Along with the manufacture of these telephone items, the company manufactures, by contract, TV and radio cabinets, electronic organ cabinets, display cabinets, juke boxes and other items.

During World War II, as well as during the Korean War, the company manufactured Signal Corps wood field switchboard chests and teletype car-

S. T. GULLICKSEN

ing chests for many of the telephone manufacturing companies, as well as on direct government contract.

In May, 1948, after 81 years of active life, O. Gullicksen passed on, but the corporation has continued under the direction of two sons of the founder. Spencer T. Gullicksen, with 36 years of service, is now the company's president and treasurer and Willard A. Gullicksen, with 34 years of service, is vice president and secretary. In recent years a third brother, Rowland H. Gullicksen, was made assistant treasurer and director of purchases.

V V

Indiana Steel & Wire Appoints Beisswenger Sales Manager

Robert H. Beisswenger has been appointed manager of sales, electrical materials, by Indiana Steel & Wire Co., Muncie, Ind., it was announced recently.

A native of Philadelphia, Mr. Beisswenger graduated from Temple University in 1939 and entered the employ of Philadelphia Electric Co.

He enlisted in the U. S. Army in 1941 and was assigned to the Signal Corps. He served five years in this

R. H. BEISSWENGER

country and abroad and, while in the Italian theater, was executive officer of a battalion engaged in pole line construction work. He was discharged in 1946, having attained the rank of major in the Signal Corps.

Mr. Beisswenger returned to the Philadelphia Electric Co. after his discharge, but subsequently entered the selling field. He later formed his own sales agency to handle electrical products.

V V

It has been said that "sin" is a word rapidly becoming obsolete. It is now called "experience."

July marked a transition point for the citizens of Pine Island, Minn., when a 260-line Stromberg-Carlson XY dial system and an attractive new telephone office building (shown above) were put into service. The Pine Island Telephone Co., managed by James P. Keane and his son Dennis, has set a pace in the community—going on the assumption that the best years for the city lie ahead. Located near the rapidly growing medical center of Rochester, Minn., and in the heart of an agricultural paradise, Pine Island—and the telephone company—can expect larger participation in the assured growth of this area.

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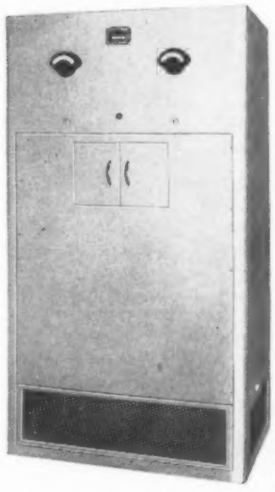

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